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THE

PROGRESS OF THE WORLD

IN

ARTS, AGRICULTURE, COMMERCE,

MANUFACTURES, INSTRUCTION, RAILWAYS, AND

PUBLIC WEALTH

SINCE THE BEGINNING OF THE NINETEENTH CENTURY

By MICHAEL G. MULHALL, F.S.S.

AUTHOR OF 'ENGLISH IN SOUTH AMERICA;' 'HANDBOOK TO THE RIVER PLATE REPUBLICS;' 'HANDBOOK OF BRAZIL,' ETC. ETC.

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TO

THE PRESS OF GREAT BRITAIN,

WHICH SO ZEALOUSLY PROMOTES

THE MORAL AND MATERIAL PROGRESS OF THE AGE,

THIS WORK IS RESPECTFULLY DEDICATED

BY

THE AUTHOR.

GRASSLANDS CRAWLEY,

May 1st, 1880.

ERRATUM.

Page 17, line 28, *for* 20,000,000 *read* 16,000,000.

,, 79, ,, 11, *for* Lake Erie *read* Lake Michigan.

For minor corrections or latest information, see Appendix.

The term Low Countries is always used to express both Holland and Belgium, as well after as before the year 1830.

TABLE OF CONTENTS.

PART I.—THE WORLD.

	PAGE
POPULATION AND VITAL STATISTICS	1
FOOD-SUPPLY OF ALL NATIONS	11
AGRICULTURE, LAND-TENURE, CAPITAL	23
GOLD AND SILVER SINCE FIFTEENTH CENTURY	27
BANKS AND PAPER MONEY	32
FINANCES AND WEALTH OF NATIONS	39
COMMERCE AND SHIPPING	45
MANUFACTURES, OPERATIVES, WAGES	55
MINERALS: COAL, IRON, COPPER, ETC.	67
RAILWAYS, CANALS, TUNNELS, BRIDGES, TELEGRAPHS	71
INSTRUCTION, SCHOOLS, LIBRARIES, PRESS	87
CHARITIES, PAUPERISM, CRIME, INSANITY	96

PART II.—BRITISH EMPIRE.

UNITED KINGDOM, GROWTH SINCE 1800	104
WEALTH OF BRITISH NATION	110
BANKS, COMPANIES, CO-OPERATIVE SOCIETIES	113
DEBT, TAXES, LOCAL RATES, CONSOLS	119
AGRICULTURE, LAND-OWNERS, CROPS, CATTLE	123
FOOD-SUPPLY, LIQUOR, INTEMPERANCE	133
CONDITION OF THE PEOPLE	140
MANUFACTURES, TEXTILE, HARDWARE, ETC.	143
MINERALS, DEVELOPMENTS, VALUE, EXPORTS	150
RAILWAYS, CANALS, HIGHROADS	152
COMMERCE, CURRENT OF SPECIE, SHIPPING	155
INSTRUCTION, SCHOOLS, LIBRARIES, ASSOCIATIONS	166
CHARITIES, HOSPITALS, INSANITY	169
CITY OF LONDON, STATISTICS OF GROWTH	173

PAGE
British Colonies, Australia 181
Dominion of Canada 203
Cape Colony and Natal 215
East Indian Empire 222
West India Islands 231

PART III.—FOREIGN COUNTRIES.

France 239
Germany 265
Belgium 309
Holland 321
Sweden, Norway, Denmark 333
Russia 361
Austria-Hungary 384
Italy 405
Spain 422
Spanish Colonies 439
Portugal 448
Switzerland 456
Greece 457
Ottoman Empire 460
Japan 466
China 468
Persia 470
Sarawak 471
Brazil 473
Argentine Republic 478
Chile 483
Peru 484
Bolivia and Paraguay 486
Uruguay 488
Venezuela, Ecuador, and New Grenada 489
United States 490

Appendix 527
Index 553

PROGRESS OF THE WORLD.

PART I.

I.—POPULATION.

THE nineteenth century is remarkable for the rapid increase of numbers among the civilised nations of mankind, which have doubled in a lifetime.

	1801.	1880.
United Kingdom and Colonies .	17 millions	43 millions
European Continent . . .	170 ,,	275 ,,
United States	5 ,,	45 ,,
	192 ,,	363 ,,

Taking collectively the British and United States populations, we find they have risen from 22 to 88 millions, an increase of 300 per cent, while the European Continent rose only 63 per cent. The immediate result of the spread of the Anglo-Saxon race is to make our language assume in the present age the same place that Latin held in the days of the Cæsars. As an American writer has observed, "The world now consists of two nations, those who speak English, and those who don't." The progress of languages since 1801 has been as follows:—

	1801.	1880.	Increase.
English	22 millions	90 millions	310 per cent
German	38 ,,	66 ,,	70 ,,
French	34 ,,	46 ,,	36 ,,
Russian	30 ,,	63 ,,	110 ,,
Spanish	32 ,,	44 ,,	36 ,,
Italian	18 ,,	30 ,,	66 ,,
Portuguese	8 ,,	13 ,,	62 ,,
	182 ,,	352 ,,	95 ,,

Thus, in 1801, English was spoken by one-eighth of the civilised people of the world, and to-day it is the language of one-fourth. The increase of the other languages is comparatively small.

Mr. Block's Tables of geometrical increase for the various nations show that England is much ahead of the rest of Europe, and that the principal nations have not been multiplying since 1860 in the same manner as before.

ANNUAL INCREASE FOR 10,000 INHABITANTS.

	Before 1860.	Since 1860.
England	137	124
Russia	145	84
Prussia	116	83
Austria-Hungary	50	85
Low Countries	60	89
Spain	66	73
Italy	61	67
France	48	1

Increase of population depends, in a manner, less on the number of births than on the death-rate. Most European states have a higher rate of births than Great Britain, and yet their increase is 25, or even 50 per cent less than ours. The average of twenty-three years (Russia excepted), namely, from 1852 to 1874, was as follows:—

RATE PER 1000 INHABITANTS.

	Births.	Deaths.	Increase.
England	35	22	13
Prussia	33	27	11
Austria	40	32	8
Spain	37	30	7
Italy	37	30	7
Russia	41	37	4
France	26	24	2

The birth-rate in England is now 2 per thousand higher than from 1853 to 1859, whereas, in many of the Continental states, it is falling. The most notable decline is in France, where the rate from 1810 to 1830 was 31 per 1000, or one-fifth higher than in the last twenty years. Taking the general average of Europe, there are 6 per cent more male infants born than females; but the surplus falls to 3 per cent in Russia, and rises to 16 per cent among Jews. After destructive wars, there is a great excess of male births, as occurred in France after 1815, and still more notably in Paraguay, since the exterminating war of 1865-1870; the male births in the latter country being 8 times as numerous as the females, as if Nature sought to restore the balance of the sexes. In the northern hemisphere, February is the month that shows the largest number of births; in the southern, July. The ratio of still-born infants is 4½ per cent, being always greater in towns than in rural districts, and less among Jews than Christians. Male still-births are 40 per cent more numerous than female. The proportion of illegitimate births has declined one-third in Great Britain and some other countries since 1840, but it has risen in France and Sweden. At present it stands thus:—

	Legitimate.	Illegitimate.
United Kingdom . . .	95 per cent	5 per cent
European Continent . .	92 ,,	8 ,,
Jews	98 ,,	2 ,,

Twins are most numerous in Sweden and Bavaria, say 14 per 1000; the same countries also ranking highest for illegitimacy (see Appendix).

Wagner's census of Europe for 1872 showed the preponderance of females had increased since 1860, which probably arose in some measure from the intermediate wars, and still more from emigration. Scotland and Sweden have 8 per cent excess of females, but in southern Europe the sexes are almost even.

The highest rate of marriages is in Germany, Austria, and England, the lowest in Ireland (see Appendix), the general average for Europe being 16 per 1000 inhabitants. The number of marriages is materially affected by passing events: the cholera of 1832 in Germany caused a decline of 12 per cent for the following year; the rise of wheat in England in 1855 was succeeded by a sensible diminution in like manner, and the failure of crops in Sweden in 1868 caused a fall of 20 per cent in the marriage returns of 1869. The same cause produced a similar result in England last year. The rate of sterility is difficult to determine; we know that in the United Kingdom 9 marriages out of 10 have children, except among the nobility, which show but 8 in 10; and this partly explains why so many old peerages are dying out.[1] Undetermined causes make the proportion of children to each marriage vary in a given country at different epochs. For example,

[1] In 1877 it was found that the marriages of cousins compared to the total number in the United Kingdom were as follows:—1½ per cent in London, 2 per cent in the whole kingdom, 3½ per cent among the gentry, and 4½ per cent among the nobility.

the rate is rising in the United Kingdom, Belgium, and Austria, and falling in all other countries as compared with ten years ago.

	1866-67.	1876-77.
United Kingdom	433 per 100 marriages	460
Belgium	450 ,, ,,	490
Austria	470 ,, ,,	512
Italy	520 ,, ,,	500
France	350 ,, ,,	330
Germany	505 ,, ,,	475

The marrying age is affected by climate, or other causes, in the following degree :—

	Men.	Women.	General Average.
England	27 years.	25 years.	26 years.
France	30 ,,	26 ,,	28 ,,
Italy	31 ,,	25 ,,	28 ,,
Switzerland	29 ,,	27 ,,	28 ,,
Austria	32 ,,	26 ,,	29 ,,
Germany	32 ,,	28 ,,	30 ,,
Scandinavia	36 ,,	28 ,,	32 ,,

The duration of marriage varies from 27 years in England and France to 22 years in Scandinavia and the Low Countries. The probable duration is expressed as follows in relation to the united ages of husband and wife :—

United age.	Probable duration.
50 years	27 years
70 ,,	22 ,,
80 ,,	18 ,,
100 ,,	12 ,,

The proportion of married people is much greater in the south of Europe than in the north, as shown in the whole population thus :—

	Married.	Widowed.	Unmarried.
France . . .	41 per cent	8 per cent	51 per cent
Spain . . .	37 ,,	7 ,,	56 ,,
Italy . . .	36 ,,	6 ,,	58 ,,
England . .	35 ,,	5 ,,	60 ,,
Austria . . .	35 ,,	5 ,,	60 ,,
Sweden . . .	33 ,,	5 ,,	62 ,,
Holland . .	33 ,,	6 ,,	61 ,,
Prussia . . .	33 ,,	6 ,,	61 ,,
Switzerland . .	32 ,,	7 ,,	61 ,,
Belgium . .	32 ,,	5 ,,	63 ,,

The excess of widows in France and Spain is partly due to recent wars. The number of widowers marrying again, compared to widows, is as 15 to 10. Early marriages are too frequent in England, 4 per cent of the husbands being under 20 years, as against 2 per cent in the rest of Europe. The greatest number of women marrying under 20 years is in France.

Climate has a certain influence on the term of human life, and so have sanitary regulations, and even political institutions. "Among Russian serfs," says Quetelet, "the death-rate is 48 per 1000, and in free England it is only 20." Civilisation is unquestionably tending to prolong the span of existence, which is now six years longer in England, France, and Germany than it was fifty years ago. Meantime, the death-rate in most European capitals is excessive, Madrid, for instance, having three times the mortality of London :—

London	222	per 10,000	inhabitants
Paris	233	,,	,,
Rome	290	,,	,,
Berlin	310	,,	,,
Vienna	330	,,	,,
Madrid	650	,,	,,

Northern countries have succeeded more notably than southern in reducing the death-rate; in Italy and Spain

the life average is actually lower than it was in England seventy years ago. The general average for Europe is about thirty-five years, and it is observed that farm-labourers and persons in receipt of Government pensions live the longest. Professor Neison gives the subjoined Table of the expectation of life in England, as compared with Holland and Sweden, as follows:—

Age.	Gentry.	Farm-labourers.	All England.	Holland.	Sweden.
20	38 years	48	41	39	40
30	31 ,,	41	34	32	33
40	24 ,,	33	27	26	26
50	18 ,,	25	21	20	19
60	12 ,,	18	15	13	13

It is remarkable that the average age of all persons living varies greatly between countries, and the following Table shows that the French are the oldest, and the people of the United States the youngest.

AVERAGE AGE OF ALL LIVING.

	1870.
France	32 years
Sweden and Holland	29 ,,
Italy	28 ,,
England	27½ ,,
Germany	27 ,,
United States	24½ ,,

Sanitary arrangements have proved of the highest value, their results in England being shown as follows:—

	1801 to 1810.	1850 to 1870.
Deaths under 20 years	48 per cent	34 per cent
,, over 20 years	52 ,,	66 ,,

In like manner Dr. Farr's efforts for barrack-reform have been accompanied by a reduction of 40 per cent[1] in the

[1] A still greater reduction has been effected among our garrison in India, the death-rate in recent years averaging only 2 per cent, against 7 per cent previous to 1860.

annual death-rate. There is in every country an amount of preventible sickness that causes a heavy burden to the nation; this was estimated by Chadwick in 1842 to amount in England to £14,000,000 sterling per annum. Preventible mortality is also a large item, M. Block showing that the death-rate of the workmen's quarters in Paris is double that of the Faubourg St. Germain.

There are, nevertheless, some rules of mortality almost uniform in all countries. Thus married women live longer than single, in spite of the toll of 26 per 1000 mothers dying in childbed. Women usually live two years longer than men. In the northern hemisphere January is 50 per cent more fatal than July, the reverse occurring in the southern.

Longevity depends little on climate; the unhealthiest parts of Spanish America abound in half-castes over 100 years of age. No complete returns of centenarians can be obtained for Europe, but the latest for England and Austria are as follows:—

	England.	Austria.
Male centenarians	22	86
Female „	65	100
Total	87	186

In the eighteenth century Lejòncourt gave a list of 49 persons whose ages ranged from 130 to 175 years, reminding us that the Countess of Desmond was killed by a fall from a cherry tree in her 146th year, and Thomas Parr died (after a carousal at Lord Arundel's) aged 152. The well-known Cardinal de Salis, who died at the age of 110, said the secret of longevity was, to preserve an even mind, to take exercise in all seasons, and to drink a pint of Valdepeñas daily.

The percentage of men of an age to bear arms is in some countries much higher than in others (1867[1]):—

	Males between 15 and 60.	Ratio to population.
Austria	11,314,000	31½ per cent
France	11,620,000	30½ ,,
Great Britain	7,947,000	26¼ ,,
United States	7,776,000	21½ ,,
Prussia	5,080,000	24 ,,

Although the United States had 6 million inhabitants more than Great Britain, they had a smaller number of able-bodied men. About three million men have been slain in war since the Treaty of Vienna, the following estimate giving an approximate idea:—

Date.	War.	Killed.
1828	Balkan campaign	120,000
1830-40	Spanish and Portuguese succession	160,000
1848	Revolution in Europe	60,000
1854	Crimea, allies	155,000
,,	,, Russians	630,000
1859	Italy, allies	24,400
,,	,, Austrians	38,700
1863-65	United States, northern	206,000
,,	,, southern	375,000
1866	Prussia and Austria	51,200
1866	Franco-Mexican	65,000
1867-70	Brazil and Paraguay	232,000
1870-71	Franco-German	290,000
1876-77	Russo-Turkish	200,000
	Total	2,607,300

If to the above be added the French war in Algeria, the British campaigns in India, South Africa, etc., the Spanish in Morocco, and other minor affairs, it will be seen that the

[1] The war of 1870 has materially altered the condition of things as regards Germany and France; the former is said to grow 166,000 soldiers, the latter 163,000, per annum.

civilised nations alone have lost 3,000,000 men in the wars of fifty years.

Famines and epidemics have carried off about 4,000,000 victims, of which cholera claimed one-half. The partial returns of six countries show as follows :—

Cholera of	1832	305,000 victims
,,	1848	209,000 ,,
,,	1854	425,000 ,,
,,	1866	307,000 ,,
		1,246,000 ,,

The most destructive famine was that of Ireland in 1846-47-48, in which 1,000,000 of the inhabitants died, either of hunger or of famine fever. Floods have also been the cause of some loss of life, but comparatively trifling.

Emigration from Europe to America and Australia has been attended with most beneficial results during the last sixty years, no fewer than 16 millions of people having left the over-crowded countries of the Old World, to better their fortunes in the New, viz.—

	United States.	Brit. Colonies.	S. America.	Total.
British	4,786,000	3,043,000	75,000	7,904,000
Germans	3,612,000	150,000	65,000	3,827,000
Italians	62,000	11,000	583,000	656,000
Span. and Portuguese	31,000	3,000	394,000	428,000
French	271,000	30,000	77,000	378,000
Scandinavians	251,000	14,000	17,000	282,000
Swiss	108,000	13,000	46,000	167,000
Dutch and Belgians	62,000	95,000	9,000	166,000
Various	1,187,000	430,000	280,000	1,897,000
	10,370,000	3,789,000	1,546,000	15,705,000

Of the total, nearly 10 millions were males; the ratio of British and German emigrants being as 60 males to

40 females, and of Spanish and Italian, as 70 to 30. American and Australian economists agree in valuing each able-bodied settler as a gain of £180 to the colony. Such has been the prosperity of these settlers, that the New York bankers remitted to Ireland a sum of £19,250,000 sterling in twenty-five years, ending with 1877. The German colonies in Brazil are also very successful; and still more so, the British emigrants in Australia and La Plata, whose sheep-farms cover territories vaster than the conquests of Alexander.

II.—FOOD.

In the food supply of the world mankind has made notable progress in less than half a century, not only by reason of the introduction of railways and steamers, but also by the removal of arbitrary laws against grain. Forty years ago the peasants of Castille and Leon saw their wheat rotting in the subterranean "silos" provided by Government, because it was forbidden to export it. Forty years ago Great Britain paid famine prices for bread, sooner than repeal the Corn Laws; while the Moujiks of the Don had such abundant crops, that wheat was too cheap to pay the cost of freight to the nearest port. Forty years ago, owing to want of roads, the price of grain in Western Prussia was double that which ruled in the eastern part of the kingdom. The following Table (given at full in Appendix) shows the average of prices in thirty years previous to the epoch of railways and free trade, and compares the same with twenty years subsequent to the said epoch:—

	1820-1849.	1850-1870.
England	86 pence per bushel	79 pence
France	67 ,, ,,	75 ,,
Germany	50 ,, ,,	68 ,,
Austria	41 ,, ,,	80 ,,
Hungary	35 ,, ,,	64 ,,
Russia	44 ,, ,,	65 ,,
New York	69 ,, ,,	73 ,,
General average	56 pence	72 pence.

Taking into account that money has lost about 20 per cent of its purchasing power, the price in the second epoch is 4 per cent dearer than before, but it is so equalised as to benefit all. In the first epoch, wheat in England ruled 150 per cent higher than in Hungary; in the second, the difference was only 23 per cent. In the following Table is shown the consumption of the three staple articles of food: in the item of grain an allowance is made for potatoes, at the usual rate—4 bushels equal to 1 of grain:—

Per Inhabitant.	Grain.	Wine or Beer.	Meat.
United Kingdom	8 bushels	33 gallons	110 lbs.
United States	8 ,,	9 ,,	120[1] ,,
France	7 ,,	38 ,,	66 ,,
Germany	7 ,,	22 ,,	48 ,,
Austria	6 ,,	17 ,,	39 ,,
Russia	8 ,,	2 ,,	44 ,,
Low Countries	6 ,,	22 ,,	40 ,,
Spain	6 ,,	7 ,,	29 ,,
Italy	5 ,,	27 ,,	28 ,,
Switzerland	5 ,,	33 ,,	51 ,,
Scandinavia	5 ,,	3 ,,	45 ,,
Portugal	5 ,,	18 ,,	20 ,,

The English and Americans are the best-fed people of the present age, and therefore able to accomplish the great-

[1] This is only an estimate, but Professor Caird says the Americans consume more meat than we do.

est amount of work. According to Vauban, Bossuet, and Lagrange—three names illustrious in war, religion, and science, "that country must be considered the most prosperous in which the inhabitants are able to have the largest ratio of meat for their food." In this respect the United Kingdom is much ahead of other European nations.

Wheat.—The world consumes 38,500,000 tons yearly, and at the average English rate of 28 bushels per acre it would suffice to put the island of Great Britain under wheat to supply all nations. The wheat-lands of the world make up 105,000,000 acres, giving an average of 15 bushels. The supply and demand are shown as follows:—

	Crop, Mill. Bush.	Consumption.	Surplus.	Deficit.
United States.	400	250	150	
France	230	260	...	30
Russia	160	80	80	
Germany	150	170	...	20
Italy	140	145	...	5
Turkey	90	80	10	
United Kingdom	90	200	...	110
Austria	90	76	14	
Spain and Portugal.	85	85	...	
Canada	40	30	10	
Australia	30	15	15	
Chile	15	10	5	
Other Countries	20	139	...	119
	1540	1540	284	284

The wheat-fields of the world have been extending prodigiously in the last twenty years. Down to 1859 the United States used at intervals to import wheat from Europe, whereas they produce at present one-fourth of the world's crop. Previous to 1855 Australia was fed with Chilian flour; but since 1874 some of the Australian colonies have annually exported 20 bushels of grain per inhabitant.

Facilities for transport have so far improved, that wheat grown on the Mississippi or in New Zealand is sold as cheap in Europe as what is raised on the Don or the Danube. One railway in the United States—the Central Illinois—can convey 80,000 bushels of grain daily for shipment at New Orleans. The farmers of Red River, Minnesota, can send their grain for 12d. a bushel to New York, or 15d. to Liverpool (say 4700 miles); while the citizens of Athens pay 36d. a bushel from Marathon, a distance of only 15 miles. With steam navigation the interchange of commodities between nations has stimulated the demand for wheat, the consumption being now three times as great as in the eighteenth century. Lagrange boasted, in 1780, that France raised half the wheat of the world; at present she does not produce enough to feed her own population. Less than one-third of mankind subsists on wheat or rye, say 380 millions, but these constitute the civilised nations. Europe pays about £92,000,000 per annum for wheat and other grain from America, India, Algeria, and Australia, of which Great Britain pays £50,000,000. The increased consumption of wheat per inhabitant in the three principal countries of Europe is shown as follows:—

	1820-24.	1850-60.
Great Britain . . .	258 lbs.	311 lbs.
Germany	306 ,,	317 ,,
France	266 ,,	392 ,,

The consumption in Great Britain has since risen to 341 lbs., and probably in equal degree in other countries.

Rye.—This grain is in some countries more used than wheat, the crop being as follows:—

	Million Bushels.
Russia	600
Germany	300
Austria-Hungary	120
France	75
Scandinavia and Low Countries	60
United States	20
	1175

The average yield per acre is under 20 bushels.

Rice.—In Asia most of the inhabitants live on rice, which therefore supports double as many of the world's population as wheat. The yield is five times as heavy, the two crops yearly giving from 80 to 100 bushels per acre. India not only raises enough for 200 million people, but exports 1,000,000 tons yearly. Java exports half that quantity. The United States grow rice largely, but only for home use.

Maize.—In Spanish America this often supplies the place of wheat, being raised with less labour, and giving very heavy crops, usually eight hundred-fold. In the United States it is used among other purposes to fatten 35,000,000 hogs.

Mandioca, like its congener the potato, is a native of the slopes of the Andes. It supports millions of the semi-Indian population from Paraguay to Venezuela, and is more used than flour in Brazil, being reduced to Farinha powder.

Potatoes.—There are 24,000,000 acres under potatoes, and the average crop is 3 tons, or 120 bushels, which is equal, in farinaceous value, to 30 bushels of wheat. The production is as follows:—

	Tons.		Tons.
Germany	23,800,000	United Kingdom	4,250,000
France	10,100,000	Low Countries	4,100,000
Russia	9,200,000	Scandinavia	2,150,000
Austria	8,000,000	Italy and Spain	1,120,000
United States	4,350,000	Other Countries	4,930,000
			72,000,000

Chestnuts.—This is a valuable item of food in southern Europe, the consumption averaging 15,000,000 bushels in Italy, and 6,000,000 in France.

Meat.—In the last century the average consumption in Europe was only 25 lbs. per head yearly, or less than half what it is at present. As Europe is no longer able to raise enough cattle for her population, an extra supply is drawn from North America, which is consumed chiefly in Great Britain; the shipments of cattle and meat from the United States in 1878 exceeding a value of £26,000,000 sterling, equal to the ordinary yearly consumption for 24,000,000 inhabitants of Europe. As soon as scientific improvements enable us to utilise the enormous resources of the River Plate[1] and Australia, we shall, doubtless, import enough meat to feed 150,000,000 persons. The three great pasture farms destined to feed Europe compare as follows:—

	Cows.	Sheep and Hogs.
United States . . .	33,400,000	73,200,000
River Plate . . .	18,850,000	77,700,000
Australia. . . .	7,400,000	61,066,000
	59,650,000	211,966,000

The above countries could easily export 10,000,000 cows and 60,000,000 sheep annually, without reducing the number of their stock.

Fish.—The seas yield a plentiful supply of wholesome food, in pursuit of which are engaged 120,000 vessels, manned by half a million fishermen. The principal fishing fleets are as follows:—

[1] For two hundred years the cattle of the Argentine Pampas were slaughtered for their hides, and even in the nineteenth century the Estancieros have often burned mares and sheep as fuel for making bricks.

	Vessels.	Men.
Great Britain	32,000	167,000
France	44,052	153,100
Italy	18,000	61,000
Scandinavia	15,000	58,000
Canada	1,400	53,000
Germany	8,130	17,200
Austria	2,850	7,200
	121,432	516,500

Most of the fishing in British waters is done by Scotchmen, who take 600,000,000 herrings, worth £1,600,000, averaging £20 per man; besides which the Yarmouth fishers take 250,000,000 herrings. The French, between deep-sea and coast fishing, take 1,500,000 tons, worth £3,500,000, or £23 per man. Swedish and Norwegian fishers take nearly the same quantity as the French, but the value is barely one-half. Canadian fisheries are worth £2,500,000, including 140,000,000 cod-fish from the Newfoundland banks. Russia derives £3,000,000 yearly from fish, the principal item being 450,000,000 lbs. from the Caspian Sea, valued at 80 per cent of the total. Holland has 108 "busses" in the North Sea fishery, the proceeds of which average £150,000 per annum, while her home fishing in the Zuyder Zee ranges from 16,000,000 to 20,000,000 of herrings.

Wine.—This is the third great requirement for the food of mankind, and the area under vineyards is increasing every year. More than 20,000,000 acres in Europe are under grapes, besides 180,000 abroad. Nevertheless, there is nothing in which people seem so little disposed to trade as wine, the exports of all nations not exceeding 150,000,000 gallons.

Exporters.	Million Gallons.	Importers.	Million Gallons.
France	70	Great Britain	20
Spain and Portugal	60	Germany and Russia	45
Italy, etc.	20	Other countries	85
	150		150

France, in the earlier part of the present century, produced 800 million gallons yearly, but in later years the vintage has averaged 1200 millions, representing a value of £48,000,000 sterling, 94 per cent being kept for home consumption, and only 6 per cent exported. Italy could raise wine to supply the half of Europe; but some of her wines cannot stand a sea voyage.

The new wine-growing countries are the United States, Australia, and South Africa, viz.—

	Acres under Vines.	Gallons.	Per Acre.
United States	130,000	20,800,000	160 gallons
Australia	15,000	1,800,000	120 ,,
South Africa	18,000	4,500,000	250 ,,

Spirits are largely consumed in those countries where the supply of wine is deficient, viz.—

	Spirits.	Per Inhab.
United Kingdom	30 million gallons	1 gallon
Germany	60 ,, ,,	1½ ,,
Russia	100 ,, ,,	1½ ,,
Scandinavia	35 ,, ,,	4 ,,
United States	72 ,, ,,	1¾ ,,
Low Countries	33 ,, ,,	3½ ,,

The consumption of spirits is increasing faster than population.

Beer.—This valuable substitute for wine seems of German origin, as Varus mentions that Arminius and his "barbarians" brewed excellent beer. The world consumes 2½ milliard gallons, viz.—

	Million Gallons.	Per Inhab.
United Kingdom	1090	32 gallons
Germany	465	11 ,,
United States	360	8 ,,
Austria	270	8 ,,
Low Countries	180	19 ,,
France	154	4 ,,
Russia and Scandinavia	60	1 ,,
	2579	9 ,,

Luxuries.—Besides the three great staples of grain, meat, and wine, there are numerous articles of food technically termed luxuries. The principal are tea, coffee, and sugar, the consumption of which varies as follows, per inhabitant:—

	Sugar.	Coffee.	Tea.
Great Britain	68 lbs.	15 oz.	72 oz.
France	17 ,,	46 ,,	1 ,,
Germany	12 ,,	78 ,,	1 ,,
Low Countries	12 ,,	138 ,,	1 ,,
Scandinavia	11 ,,	156 ,,	1 ,,
Italy	10 ,,	16 ,,	1 ,,
Spain	9 ,,	4 ,,	1 ,,
Austria	6 ,,	15 ,,	1 ,,
Russia	6 ,,	5 ,,	6 ,,
United States	45 ,,	112 ,,	17 ,,

In this Table we again see that Great Britain and the United States are the largest consumers, an undoubted proof that they are the most prosperous nations in the world.

Sugar.—The sugar crop of the world is over 3,000,000 tons; beet-root, in recent years, coming to rival the sugar-cane. Formerly beet gave only 4 per cent saccharine, but now it is made to yield double; while the cane gives only 6 (instead of 18) per cent, as two-thirds of the saccharine are lost in the manipulation. The production of sugar is as follows:—

Cane Sugar.		Beet Sugar, etc.	
Cuba	630,000 tons	France	440,000 tons
Jamaica, etc.	320,000 ,,	Germany	300,000 ,,
Mauritius and China	270,000 ,,	Russia	150,000 ,,
East Indies	440,000 ,,	Austria, Holland, etc.	300,000 ,,
Brazil, Peru, etc.	240,000 ,,	Palm and maple	100,000 ,,
	1,900,000 ,,		1,290,000 ,,

The West Indies, with slave labour, used to produce one ton per acre, or two tons per slave; with free negroes the average has fallen one-half. Nearly a million acres in India are under canes, the yield being little over a quarter ton per acre; but the inhabitants have also 13,000,000 date-palms, giving 20,000 tons, or 4 lbs. per tree. In Brazil the sugar-fields are supposed to yield 2½ tons per acre. Maple trees are tapped in the United States, the sugar being used only for home consumption. Beet-root was first cultivated in Germany in the last century, and introduced by Napoleon into France, in which latter country it has thrived, owing to a Government bounty of £3 per ton, which causes a loss of £1,250,000 to the French nation.

Tea.—The annual consumption out of China is 140,000 tons, having multiplied six-fold since 1830.

Exporters.		Importers.	
China	240 million lbs.	Great Britain	140 million lbs.
India	35 ,, ,,	Russia	30 ,, ,,
Japan and Java	30 ,, ,,	United States, etc.	135 ,, ,,
	305 ,, ,,		305 ,, ,,

Yerba-mate, or Jesuits' tea, would doubtless find much favour in Europe if the Paraguayan Government removed the oppressive export duties. It is a most grateful and salutary article of food, and the first cost in Paraguay is less than 1d. per lb. The exportation in the time of Lopez averaged 11,000 tons per annum.

Coffee.—At the beginning of the present century the coffee trade of the world was only 50,000 tons, but now it is eight times as much, viz.—

Exporters.		Importers.	
Brazil .	165,000 tons	United States . . .	120,000 tons
East Indies	130,000 ,,	European Continent .	250,000 ,,
West Indies	95,000 ,,	Great Britain and Colonies	20,000 ,,
	390,000 ,,		390,000 ,,

In Brazil the coffee plantations cover 1,400,000 acres, and comprise 560 million trees, say 400 trees per acre; about 2000 trees produce a ton of coffee, the yield being equal to £20 worth per acre.

Cocoa.—About 6000 tons are produced annually, three-fourths coming from the Amazon, the rest from Trinidad and Venezuela.[1] The average consumption, per inhabitant, has doubled in England since 1870.

Oil.—The production of olive oil varies from 16 gallons per acre in Spain or Italy to 75 gallons in France, the crop averaging as follows :—

Italy	33 million gallons
Portugal and Spain . . .	35 ,, ,,
France	24 ,, ,,

It takes usually 3 bushels of olives for a gallon of oil.

Tobacco.—The total crop of the world is variously estimated from £30,000,000 to £36,000,000, the production and consumption being as follows :—

	Production.	Consumption.	Per Inhab.
United States . .	230,000 tons	120,000 tons	6 lbs.
Austria . . .	80,000 ,,	95,000 ,,	5½ ,,
Russia . . .	50,000 ,,	60,000 ,,	2 ,,
Carry forward .	360,000 ,,	275,000 ,,	

[1] Cocoa must not be confounded with coca; by chewing the leaves of the latter the Cholos can travel hundreds of miles without food.

	Production.	Consumption.	Per Inhab.
Brought forward	360,000 tons	275,000 tons	
Brazil . . .	35,000 ,,	20,000 ,,	5 lbs.
Germany . .	32,000 ,,	82,000 ,,	4 ,,
Turkey . . .	31,000 ,,	25,000 ,,	5 ,,
Java . . .	25,000 ,,	10,000 ,,	2 ,,
Manilla . . .	20,000 ,,	10,000 ,,	6 ,,
West Indies . .	20,000 ,,	...	
Other Countries .	80,000 ,,	181,000 ,,	
	603,000 ,,	603,000 ,,	

The consumption averages 1½ lb. per inhabitant in England, 2 lbs. in France, 5 lbs. in the Low Countries, and 1 lb. in Spain and Italy; it is increasing faster than population in all countries, especially in Great Britain, having risen 50 per cent per inhabitant in this country since 1850.

Dairy Products.—Butter and cheese were formerly produced in Europe in excess of the consumption, England and other countries exporting largely to Australia, Brazil, etc. At present we are dependent on America for these articles to the value of £5,000,000. The principal dairy-farming countries are as follows:—

	Butter.	Cheese.	Total.
United Kingdom .	90,000 tons	126,000 tons	216,000 tons
United States .	470,000 ,,	115,000 ,,	585,000 ,,
Holland . .	30,000 ,,	40,000 ,,	70,000 ,,
Italy . . .	4,000 ,,	14,000 ,,	18,000 ,,
Canada . . .	12,000 ,,	18,000 ,,	30,000 ,,
Switzerland . .	5,000 ,,	42,000 ,,	47,000 ,,
	611,000 ,,	355,000 ,,	966,000 ,,

Among dairy products may also be included eggs. The United States produce 26,000,000 daily. England imports 20,000,000 weekly from the Continent.

III.—AGRICULTURE.

The area of land under crops is increasing in Europe, and still more notably in America and Australia; the mode of agriculture has, moreover, improved more in the last twenty years than in a dozen centuries preceding. At present nearly one-third of Europe is under tillage—

	Tillage.	Woods.	Pasture, etc.
France	57 per cent	18 per cent	25 per cent
Belgium	52 „	18 „	30 „
Germany	50 „	26 „	24 „
Italy	38 „	18 „	44 „
Austria	32 „	33 „	35 „
United Kingdom	30 „	3 „	67 „
Denmark	30 „	5 „	65 „
Spain	30 „	5 „	65 „
Holland	22 „	7 „	71 „
Russia	21 „	40 „	39 „
Portugal	19 „	5 „	76 „
Switzerland	16 „	16 „	68 „
Sweden and Norway	4 „	63 „	33 „

The above Table shows that France is the most highly cultivated country, thanks to the system of peasant proprietors, for, as the Italians say, "The ploughshare may be silver, but the spade is gold." This mode of farming will support the largest population per acre, and get most value out of a given area of land. But economically it does not pay so well as large farms, the waste of labour being very great. One farmer, like Dr. Glyn of California, or Mr. Dalrymple of Dakotah, with a field of wheat covering 100 square miles, can raise as much grain with 400 farm-servants as 5000 peasant proprietors in France. The following Table shows the quantity of grain raised in each country, and the ratio per male peasant:—

	Acres under Grain.	Million Bushels.	Per Acre.	Per Male Peasant.
United States . .	101 millions	2340	23¼	820 bushels
Russia . . .	158 ,,	1585	10	156 ,,
Germany . .	43 ,,	990	23	245 ,,
France . . .	40 ,,	840	21	220 ,,
Austria-Hungary .	35 ,,	520	15	180 ,,
United Kingdom .	12½ ,,	455	36	540 ,,
Spain . . .	15 ,,	300	20	160 ,,
Italy . . .	18 ,,	270	15	140 ,,
Canada and Australia	14 ,,	140	10	350 ,,

Land tenure in most countries of Europe has been in recent years placed on a better footing than before. At the beginning of the century serfdom prevailed in Germany, Scandinavia, Austria, Russia, and some other countries. Stein led the way for emancipation in Germany in 1809, but his work was not completed till 1848. Serfdom still exists in some manner in Russia, as the peasants are condemned to "fixity of tenure," being liable to imprisonment if they leave their farms before the year 1901. They are, nevertheless, nominally landowners. At foot is a statement of the number and size of estates in the principal countries :—

	No. of Estates.	Average Extent.	Under crops.
United Kingdom . .	180,524	430 acres	128 acres
France	3,226,600	34 ,,	18 ,,
Germany	2,436,000	56 ,,	25 ,,
Russia	11,336,000	108 ,,	15 ,,
United States . .	2,660,000	253 ,,	56 ,,
Italy	1,865,000	40 ,,	15 ,,
Spain and Portugal . .	910,000	185 ,,	46 ,,
Austria-Hungary . .	3,432,000	45 ,,	11 ,,
Low Countries . . .	485,000	45 ,,	17 ,,
Sweden and Norway .	324,000	667 ,,	31 ,,
Denmark	70,830	130 ,,	90 ,,
Greece	163,000	72 ,,	12 ,,
	27,088,954	105 ,,	23 ,,

The above Table does not include cottiers,—that is, owners of less than five acres, of which class there are in France alone 1,140,000, who are put down as paupers on the official list. Land may be said to average £15 an acre all over Europe, but it sells for double that price in France or England, and can seldom be obtained at less than £60 in the Low Countries. The annual yield, between crops and pasture, is about £4 per acre. Cattle constitute a great portion of the wealth of most countries (see Table in Appendix), and if a general value of £10 for each cow, and £1 for each sheep, be supposed, it will be found the average is about £5 worth for each inhabitant of the European Continent. Few countries can rival Great Britain in the value of its farming stock, whether as compared to area or population. At the same time, no country equals the United States in the annual income derived from tillage and pasture, as shown in the following Table:—

	Value of Land.	Stock.	Total Capital.	Annual Income.
	£	£	£	£
United Kingdom .	1,800,000,000	240,000,000	2,500,000,000	265,000,000
France . .	2,660,000,000	210,000,000	3,200,000,000	380,000,000
Germany . .	1,560,000,000	219,000,000	2,060,000,000	340,000,000
United States .	1,544,000,000	355,000,000	2,224,000,000	535,000,000
Austria-Hungary	1,124,000,000	200,000,000	1,564,000,000	263,000,000
Russia . . .	1,080,000,000	356,000,000	1,690,000,000	370,000,000
Italy . . .	930,000,000	53,000,000	1,030,000,000	142,000,000
Spain and Portugal	890,000,000	48,000,000	990,000,000	130,000,000
Low Countries .	650,000,000	60,000,000	750,000,000	75,000,000
Scandinavia .	580,000,000	69,000,000	700,000,000	78,000,000
	£12,818,000,000	1,810,000,000	16,708,000,000	2,578,000,000

Great Britain and the Low Countries obtain little over 10 per cent on their capital, while the United States and Russia show 24 and 22 per cent. The income comprehends not only the gross receipts from pastoral and tillage-

farming, but also the proceeds of timber from the various forests, except in the United States, where wood-cutting is usually included among manufacturing industries. The principal forests of the world are as follows:—

	Area of Forest.	Product.	Per acre.
Canada . . .	900 million acres	£12,000,000	3 pence
United States . .	560 ,,	77,000,000	33 ,,
Russia . . .	510 ,,	25,000,000	12 ,,
Brazil . . .	500 ,,	2,000,000	1 ,,
Scandinavia . .	113 ,,	9,000,000	20 ,,
Germany and Austria	84 ,,	22,000,000	61 ,,
Gran Chaco . .	70		
France . . .	23 ,,	9,000,000	98 ,,
	2760 ,,	£156,000,000	13 ,,

The influence of timber on climate is evident in many countries. The rainfall of Spain and the Canary Islands has been lamentably reduced by cutting down the timber. On the other hand, it is excessive in Brazil and other densely-wooded countries. For example, at Sarawak, in Borneo, the rainfall averages 180 inches yearly, or six times the average register at Greenwich.[1] As an instance of the exact value of rainfall, Sir R. Rawson gives the result of 14 years' observations while he was Governor of Barbadoes, as follows:—

	Hhds. Sugar.
1864-1873, for each inch of rain . . .	800
1874-1877, ,, ,, ...	900

The increase in the latter years was owing to a larger area under cane.

Mortgages.—Great Britain is much more heavily mort-

[1] Besides the influence of forests on rainfall, there are other causes apparently proved. Mr. Meldrum of Mauritius shows that a year of maximum sun-spots is followed by 10 per cent more rain; and Baron Lesseps asserts that since the opening of the Suez Canal the rainfall in that part of Egypt has doubled.

gaged than any other country; but the interest is the lowest, and hence the burden is by no means so heavy as would at first appear.

	Ratio of Mortgage.	Interest.	Annual Burthen.
United Kingdom .	58 per cent	4 per cent	£23 per £1000
France . . .	8 ,,	5 ,,	4 ,,
Holland . . .	9 ,,	4⅓ ,,	4 ,,
Denmark . . .	35 ,,	5 ,,	17 ,,
Sweden . . .	30 ,,	5½ ,,	16 ,,
Russia . . .	15 ,,	6 ,,	9 ,,
Austria-Hungary .	7 ,,	7 ,,	5 ,,
Germany . . .	21 ,,	6 ,,	13 ,,
Spain and Portugal .	38 ,,	8 ,,	30 ,,
Italy	43 ,,	9 ,,	39 ,,

The distressed condition of agriculture in Spain and Italy is fully explained by the appalling weight of mortgages.

IV.—GOLD AND SILVER.

These two metals, which have materially aided the cause of progress, have suffered such mutations of fortune in the nineteenth century, that it may be worth while to study their antecedents. Michael Chevalier is of opinion that at the period of the discovery of America the total amount of gold in Europe was only £12,000,000, and of silver £28,000,000. At that time an ounce of gold was worth ten of silver, but as soon as the conquest of Mexico and Peru by the Spaniards poured a flood of silver into Europe this metal lost one-third of its value. In the seventeenth and eighteenth centuries gold stood for fifteen times the value of silver. A new epoch occurred with the discovery of gold in California and Australia, but silver never recovered its position as a precious metal. The following Table shows the progress of both metals since the time of Columbus:—

Date.	Gold.	Silver.	Total.
1492 . . .	£20,000,000	£40,000,000	£60,000,000
1700 . . .	227,000,000	520,000,000	747,000,000
1800 . . .	440,000,000	1,026,000,000	1,466,000,000
1848 . . .	560,000,000	1,322,000,000	1,882,000,000
1880 . . .	1,220,000,000	1,612,000,000	2,832,000,000

During 300 years of the Spanish dominion in America the mines of Mexico, Peru, and Brazil yielded a little over £1,200,000,000, of which three-fourths were silver. Since Marshall's discovery of gold in California (1848) there has been an increase of £950,000,000 in precious metals, as follows:—

	Gold.	Silver.	Total.
United States . .	£282,000,000	£74,000,000	£356,000,000
Australia . . .	252,000,000	...	252,000,000
Spanish America . .	20,000,000	160,000,000	180,000,000
Russia . . .	93,000,000	3,000,000	96,000,000
Other countries . .	11,000,000	55,000,000	66,000,000
	£658,000,000	£292,000,000	£950,000,000

By a strange coincidence the annual yield of California and Australia has averaged the same amount, namely £9,000,000, and in each case the highest year reached £15,000,000, the number of diggers being also about equal, and their gains averaging from £100 to £150 per man per annum. The biggest nugget was found in Australia, namely the "Welcome" nugget, found at Ballarat, June 11, 1858, weighing 2020 ounces, worth £8376 sterling. Siberia produces at least £3,000,000 per annum, possibly double that amount, as the Russian Government is little anxious to publish the actual yield. Spanish America, during the last thirty years, has averaged from £5,000,000 to £6,000,000 sterling of silver, but the Nevada mines, in the United States, have recently eclipsed Mexico and Peru. Since the discovery of the Nevada fields, in 1862, the production of silver has rapidly increased, while the

gold-fields of the world are rapidly declining in equal ratio. The official returns since 1848 may be summed up thus :—

	Gold. Annual Production.	Silver. Annual Production.	Total.
1848 to 1851 . .	£14,000,000	£9,000,000	£23,000,000
1852 to 1861 . .	27,000,000	8,000,000	35,000,000
1862 to 1871 . .	21,000,000	10,000,000	31,000,000
1872 to 1878 . .	16,000,000	12,000,000	28,000,000

Although the stock of gold in the world is more than double what existed in 1848, and silver shows an increase of only 25 per cent, the purchasing power of these metals has declined in different ratio. Thus gold seems to have lost but 20, and silver fully 33, per cent. It appears, meantime, from the mint returns of the various countries, that, owing to the increasing demands of trade, the amount of coin issued since 1848 has been three times as much as then existed in the world (based on the estimates of the best authorities of thirty years ago) :—

	Gold Coin.	Silver Coin.	Total.
Stock in 1848 . .	£120,000,000	£240,000,000	£360,000,000
English mint .	148,000,000	12,000,000	160,000,000
Indian „ .	1,500,000	155,000,000	156,500,000
Australian „ .	38,000,000	...	38,000,000
United States „ .	186,000,000	17,000,000	203,000,000
French „ .	270,000,000	42,000,000	312,000,000
German „ .	70,000,000	45,000,000	115,000,000
Austrian „ .	12,000,000	27,000,000	39,000,000
Russian „ .	84,000,000	15,000,000	99,000,000
Belgian „ .	15,000,000	18,000,000	33,000,000
Italian „ .	10,000,000	18,000,000	28,000,000
Holland, Sweden, etc.	5,000,000	31,000,000	36,000,000
Total . .	£959,500,000	£620,000,000	£1,579,500,000

Thus the quantities coined since 1848 sum up £1,220,000,000, which is £270,000,000 more than the world has produced of precious metals in these thirty years. In fact, we had to fall back on the uncoined bullion exist-

ing in 1848, to the extent of £180,000,000 gold and £90,000,000 silver, viz.—

	Gold.	Silver.	Total.
Coined since 1848 .	£840,000,000	£380,000,000	£1,220,000,000
Yield of mines . .	660,000,000	290,000,000	950,000,000
Deficit . .	£180,000,000	£90,000,000	£270,000,000

How much coin has been melted down[1] or re-minted it is impossible to judge, but we know that India has absorbed since 1840 no less than £105,000,000 of gold and £238,000,000 of silver, together forming a greater value than the gold taken either from California or Australia. It is generally supposed that India is to blame for the fall of silver from 63 to 50 pence per ounce; if this be so, how comes it to pass that in 1877-78, when India absorbed £22,000,000 of silver, the price of this metal was lowest? The sale of German silver tended so much to its depreciation that Prince Bismarck, after selling £32,000,000 at a loss of 15 per cent, judged proper to stop the sale in June 1879. Meantime, the United States continue to mint £4,000,000 of silver yearly, but most of it finds its way to China. The total coinage now in use in the world is approximately as follows:—

	Gold.	Silver.	Total.
Europe . . .	£725,000,000	£375,000,000	£1,100,000,000
America, Asia, etc.	230,000,000	200,000,000	430,000,000
	£955,000,000	£575,000,000	£1,530,000,000

About one-sixth of the bullion of the world is locked up in banks, and the actual circulation compares, as follows, with population:—

[1] The annual wear-and-tear of gold, between jewellers and shipwreck, is usually estimated at £6,000,000. From 1840 to 1850 the Paris jewellers consumed per annum 5¼ tons of gold, worth £720,000, and 69 tons of silver, worth £500,000 sterling.

	Total Specie.	In Bank.	Circulation.	Per Inhab.
United Kingdom	£120,000,000	£32,000,000	£88,000,000	55 shillings
France . .	310,000,000	90,000,000	220,000,000	120 ,,
Germany . .	123,000,000	27,000,000	96,000,000	45 ,,
Austria . .	50,000,000	16,000,000	34,000,000	18 ,,
Italy . .	48,000,000	3,000,000	45,000,000	33 ,,
Belgium . .	37,000,000	4,000,000	33,000,000	140 ,,
Spain and Portugal	63,000,000	8,000,000	55,000,000	55 ,,
Russia . .	110,000,000	26,000,000	84,000,000	22 ,,
Holland, Greece, etc.	239,000,000	17,000,000	222,000,000	...
Europe . .	£1,100,000,000	£223,000,000	£877,000,000	55 ,,
United States .	70,000,000	41,000,000	29,000,000	14 ,,
Australia, Asia, etc.	360,000,000	20,000,000	340,000,000	...
	£1,530,000,000	£289,000,000	£1,241,000,000	20 ,,

The official returns of bullion imports and exports show that in the last ten years Europe has imported a surplus of £327,000,000, viz.—

From United States . .	£108,000,000
,, Australia . . .	81,000,000
,, South America, etc. .	138,000,000
	£327,000,000

In the following Table are shown the countries which have absorbed the above amount, Russia being the only country in Europe which exports precious metals :—

	Imports.	Exports.	Surplus Imports.	Surplus Exports.
Russia . .	£20,000,000	£40,000,000	...	£20,000,000
France . .	272,000,000	136,000,000	£136,000,000	...
Great Britain .	314,000,000	268,000,000	46,000,000	...
Austria . .	33,000,000	33,000,000	...	...
Italy . . .	4,000,000	3,000,000	1,000,000	...
Spain . . .	26,000,000	2,000,000	24,000,000	...
Scandinavia .	8,000,000	5,000,000	3,000,000	...
Low Countries and Germany . .	239,000,000	102,000,000	137,000,000	...
	£916,000,000	£589,000,000	£347,000,000	£20,000,000

While the above Table shows the shipments of bullion between the various countries, there is no way of ascertaining, even approximately, how far the passenger traffic tends to restore equilibrium, or how much the precious metals may accumulate in Europe in a given period.

V.—BANKS AND PAPER MONEY.

The Chinese invented bank-notes in the ninth century, and called them "flying money," but the currency became so inflated, that two centuries later a £20 note would only purchase a pound of rice. When Sir John Mandeville visited China, in the fourteenth century, the Emperor issued leather money ("which His Majesty spends outrageously"), and some years later the currency was transferred to a joint-stock bank of Chinese merchants, who ultimately failed, and paid only two shillings in the pound. In Europe the first bank was founded by two Jews at Venice, in the thirteenth century, but no regular bank of emission seems to have been established till that of Mr. Palmstruck, in Sweden, a few years before Patterson founded the Bank of England. At the beginning of the nineteenth century paper money was in bad repute, because people remembered in Paris when a pair of boots cost £350 in the currency of the French Republic. Confidence was again shaken in 1836, when the "wild-cat" banks of the United States caused such widespread disaster. At present paper money is of general use throughout the world, summing up a total of almost £900,000,000, which is about equal to the total stock of existing gold coin. It consists of two kinds, convertible for gold and inconvertible, the latter increasing so fast that it doubles in ten years. The actual issues are—

Convertible for gold . .	£385,000,000
Inconvertible	505,000,000
	£890,000,000

The following Table shows the convertible paper money, and its ratio to population :—

	Amount of issue.	Ratio to population.
United States . .	£132,000,000	60 shillings
France	90,000,000	50 „
United Kingdom . .	47,000,000	28 „
Germany . . .	42,000,000	19 „
Low Countries . .	29,000,000	60 „
Scandinavia . . .	9,000,000	20 „
Spain and Portugal . .	8,000,000	8 „
Switzerland . . .	3,000,000	25 „
British Colonies . .	25,000,000	3 „
Total . .	£385,000,000	20 „

As regards the inconvertible currency, it varies so much that its value for gold can only be given approximately. The following Table, moreover, shows how the issue has increased since 1868 :—

	Amount in 1868.	Amount in 1880.	Value in gold.
Russia . . .	£108,000,000	£211,000,000	60 per cent
Turkey . .	...	100,000,000	50 „
Austria-Hungary .	40,000,000	64,000,000	99 „
Italy . . .	36,000,000	36,000,000	89 „
Brazil . . .	15,000,000	28,000,000	80 „
Japan . . .	...	28,000,000	87 „
Cuba . . .	5,000,000	13,000,000	45 „
Peru . . .	5,000,000	10,000,000	50 „
Chile . . .	3,000,000	6,000,000	80 „
River Plate . .	7,000,000	9,000,000	72 „
	£219,000,000	£505,000,000	

Russian paper money dates from the time of Catherine II., and its progress has been as follows :—

	Issue.	Value in gold.
1788	£6,000,000	97 per cent
1817	134,000,000	25 ,,
1864	101,000,000	95 ,,
1875	128,000,000	75 ,,
1880	211,000,000	60 ,,

In 1843 the Empire declared bankruptcy by calling in the paper money, and giving thirty new roubles for one hundred old ones. The recent war with Turkey has increased the issue by 60 per cent, yet the depreciation has only been 20 per cent, showing the elastic nature of paper money and its temptation to reckless financing. The specie reserve of the Imperial Bank is £26,000,000 sterling.

The United States have the next largest issue after Russia, one-half emitted by Government, the other half by the banks. Paper money was first used by Gen. Washington to pay his troops, but the present issue dates from the Civil War of 1862, as follows:—

	Currency.	Value in gold, min.
1862	30,000,000	97 per cent
1864-1865 . . .	166,000,000	35 ,,
1868	137,000,000	75 ,,
1880	132,000,000	100 ,,

Since the resumption of specie payments in December 1878, the country has entered on a new era of prosperity.

Turkey comes next in amount of paper money, but everything regarding Ottoman finances is involved in obscurity.

In France the monopoly of emission is held by the Bank of France, with limit £128,000,000. Since the foundation of the bank by Buonaparte, in 1803, it has twice been compelled to suspend specie payments, but its notes only declined 5 per cent for a brief interval. The issue has doubled in fifteen years, although the growth of trade has been only 20 per cent.

	1860-1870.	1875-1879.
Average issue . .	£44,000,000	£101,000,000
Trade	306,000,000	368,000,000
Issue to trade . .	15 per cent.	27 per cent.

At present the issue and specie reserve are almost equal —about £90,000,000.

Austrian currency consists partly of Government notes, partly of the issue of the Imperial Bank. The first emission was in 1762, since which time the growth of paper money has been thus :—

	Issue.	Value in gold.
1762 . .	£1,200,000	100 per cent
1811 . .	106,000,000	20 ,,
1814 . .	25,000,000	40 ,,
1841 . .	45,000,000	30 ,,
1879 . .	64,000,000	98 ,,

The Empire twice declared bankruptcy, first in 1811, when new notes were exchanged for the old ones at the rate of one florin for five ; again in 1814, giving two florins for five, so that the holder of £100 in 1810 was holder of £8 in 1814. The Imperial Bank re-modelled the currency in 1841, putting it on a better footing, since which time (except during the war with Prussia) it has steadily improved, and is now almost at par. Specie reserve £15,000,000.

The United Kingdom shows a total issue of £47,000,000, made up as follows :—

Bank of England . .	£29,000,000
Other banks . . .	18,000,000
	£47,000,000

In forty years the issue has only risen 35 per cent, while the increase of trade has been 400 per cent.

Germany has an ordinary issue of £42,000,000, but the Reichsbank has power to emit £9,500,000 more than at present. The currency stands thus :—

Reichsbank . . .	£30,500,000
Small banks . . .	5,500,000
Government notes . .	6,000,000
	£42,000,000

The specie reserve of the Reichsbank is 70 per cent or upwards of its issue.

Italy dates her inconvertible currency from April 1866, when war was declared against Austria. The war lasted twenty days, and cost £10,000,000 of paper money, emitted by the National Bank. According to law this bank may emit up to £40,000,000, and other banks an aggregate of £20,000,000; but it is believed the total circulation does not exceed £36,000,000. Specie reserve £3,000,000.

Brazil has £25,000,000 of Government notes, besides £3,250,000 emitted by banks. Since 1872 specie payments are suspended. Peru, Chile, Buenos Ayres, and Montevideo have also £25,000,000 of inconvertible notes, making a total of £53,250,000 for South America.

Japan owes the recent inflation of her currency to the Satsuma rebellion, the notes being now 13 per cent below par, and the specie reserve uncertain.

The Low Countries have £29,000,000 convertible notes, the Netherlands Bank having a minimum specie reserve of 40 per cent, and the National Bank of Belgium 33 per cent.

Scandinavia emits £9,000,000 in the following manner:—

Danish Riks-bank . . .	£4,000,000
Swedish Riks-bank . .	1,700,000
Enskilda joint-stock banks .	3,300,000
	£9,000,000

The Danish Riks-bank has the sole right of emission in

Denmark, keeping a minimum specie reserve of 40 per cent. The Bank of Sweden, founded by Mr. Palmstruck in 1656, suspended payments in the last century, compounding for 70 per cent, and again, in 1834, it compounded for 40 per cent of its liabilities.

Swiss currency comprises the issue of thirty-five banks, the specie reserve ranging from 45 to 50 per cent.

The British colonies emit £25,000,000, as follows:—

India . .	£12,300,000
Canada . .	7,720,000
Australia .	4,340,000
South Africa .	510,000
	£24,870,000

Great Britain and her colonies stand for one-third of the banking-power of the world, as shown in the following Table, which expresses, moreover, the ratio for population and for the estimated capital value of each country:—

	Banking power.	Per inhabitant.	Ratio to capital.
Great Britain .	£780,000,000	£23	9 per cent
United States .	520,000,000	12	8 ,,
France . .	340,000,000	9	5 ,,
Germany . .	280,000,000	7	7 ,,
Austria . .	170,000,000	5	7 ,,
Russia . .	145,000,000	2	5 ,,
Italy . .	62,000,000	2	3½ ,,
Low Countries .	55,000,000	6	2½ ,,
Scandinavia .	40,000,000	4	4 ,,
Australia . .	60,000,000	22	... ,,
India . .	40,000,000	...	... ,,
South America .	50,000,000	2	... ,,
Canada . .	28,000,000	7	... ,,
Spain and Portugal	30,000,000	1½	2 ,,
	£2,600,000,000	£8	

Bank rate of interest rules cheaper in England than in

other countries, which, as Mr. Mundella observes, is one of the secrets of England's greatness. The following Table shows approximately the value of money in England, France, and Germany, during a term of thirty-three years ending with 1878:—

	England.	France.	Germany.
1846-1853 .	3⅓ per cent	4 per cent	4⅓ per cent
1854-1869 .	4½ „	4⅛ „	4½ „
1870-1878 .	3⅞ „	4¼ „	4½ „
Average .	3 19/20	4¼	4 3/7

Savings banks (although first instituted at Brunswick in 1765) may be said to belong to the nineteenth century. So rapidly have they increased in the last twenty years, that Europe now counts more than 14,000 of these banks, with nearly 14,000,000 depositors, viz.—

	Savings banks.	Depositors.	Amount.	Ratio for population.
United Kingdom .	5,068	1,668,000	£74,640,000	44 shillings
Germany . .	1,687	4,033,000	76,580,000	36 „
Austria-Hungary .	557	1,639,000	79,150,000	44 „
France . .	2,221	2,853,000	40,430,000	22 „
Italy . . .	3,627	1,115,000	28,094,000	20 „
Scandinavia . .	847	1,099,000	21,305,000	50 „
Switzerland . .	312	542,000	11,581,000	84 „
Belgium and Holland	250	273,000	6,550,000	15 „
Russia . .	120	260,000	3,100,000	1 „
	14,689	13,482,000	£341,430,000	25

In Australia, if the deposits in banks be regarded as savings, we find 64,000 depositors, with £52,617,000,—a sum equal to £20 per head for the population of those colonies. The total deposits in banks of all descriptions in the United States amount to £384,000,000, or about £9 per inhabitant.

Summing up all the various banks of the world, including branches and savings banks, we find as follows:—

Great Britain . . .	8,701 banks
European Continent . .	15,847 ,,
United States . . .	6,456 ,,
British Colonies . . .	815 ,,
Other Countries . . .	298 ,,
	32,117 ,,

The banking business of Great Britain has multiplied threefold since 1850.

VI.—FINANCES AND WEALTH.

Sixty years ago, after peace had been restored in Europe, the expenditure of all nations summed up £239,000,000: at present it reaches £778,000,000, having more than trebled in the interval.

	1820. National expenditure.	Shillings per inhab.	1879. National expenditure.	Shillings per inhab.
Great Britain . .	£54,000,000	51	£83,000,000	49
France . . .	27,000,000	19	111,000,000	60
Germany . . .	8,000,000	8	85,000,000	40
Russia . . .	23,000,000	11	73,000,000	18
Austria . . .	15,000,000	11	66,000,000	37
Italy . . .	8,000,000	8	59,000,000	41
Low Countries . .	5,000,000	16	20,000,000	42
Turkey and Egypt .	4,000,000	7	29,000,000	14
Spain and Portugal .	9,500,000	13	34,000,000	34
Scandinavia . . .	2,500,000	12	8,500,000	21
Switzerland and Greece	1,000,000	7	3,500,000	16
Europe . . .	£157,000,000	16	£572,000,000	34
United States . .	5,000,000	14	48,000,000	22
South America . .	2,000,000	3	33,000,000	25
India	20,000,000	2	50,000,000	4
China and Japan .	54,500,000	3	49,000,000	3
British Colonies .	500,000	10	26,000,000	66
Total . .	£239,000,000	6	£778,000,000	16

Europe has quadrupled her taxation, the ratio per inhabitant having doubled or trebled in all countries except Great Britain, which shows a reduction of 4 per cent. The enormous increase of taxation in Europe and America arises from the accumulation of public debt and from war expenditure. If the interest on all existing debts in Europe were duly paid, it would absorb one-third of the total revenue. Compared with 1820, we find the burthen of public debt as follows :—

	1820. Interest per inhabitant.	1880. Interest per inhabitant.
Great Britain . . .	25 shillings	14 shillings
European Continent . .	3 „	11 „

Thus the relative weight of our debt is reduced nearly one-half, while that of the Continent has quadrupled. The growth of debt from 1820 to 1848 was slow, the total amount in the latter year not exceeding £1,720,000,000, equal to an increase of £9,000,000 per annum. Since 1848 the average increase has been £130,000,000 a year, the principal causes of outlay being shown in the subjoined Table :—

National debts in 1848 . . .	£1,720,000,000
Crimean War	192,000,000
Italian War	105,000,000
United States War	490,000,000
Brazil and Paraguay, etc., War . .	85,000,000
Austro-German War	90,000,000
Franco-German War	370,000,000
Russo-Turkish War	210,000,000
Armaments	1,607,000,000
Railways, Docks, Telegraphs . .	575,000,000
	£5,444,000,000

The only countries that have reduced their public debt since 1820 are Great Britain and the Low Countries, as appears from the following statement :—

	1820.	1880.	Increase.
United Kingdom	£835,000,000	£777,000,000	...
France	180,000,000	850,000,000	£670,000,000
Germany	22,000,000	215,000,000	193,000,000
Low Countries	145,000,000	120,000,000	...
Austria	95,000,000	419,000,000	324,000,000
Italy	33,000,000	405,000,000	372,000,000
Russia	47,000,000	682,000,000	635,000,000
Spain and Portugal	46,000,000	635,000,000	589,000,000
Turkey and Egypt	10,000,000	352,000,000	342,000,000
Scandinavia	...	24,000,000	24,000,000
Switzerland and Greece	...	25,000,000	25,000,000
Europe	£1,413,000,000	£4,504,000,000	£3,174,000,000
United States	20,000,000	395,000,000	375,000,000
India	29,000,000	144,000,000	115,000,000
China and Japan	...	77,000,000	77,000,000
British Colonies	...	118,000,000	118,000,000
South America	...	206,000,000	206,000,000
	£1,462,000,000	£5,444,000,000	£4,065,000,000

Deducting £83,000,000 paid off by Great Britain and the Low Countries, the net increase of debt since 1820 has been £3,982,000,000. The relative burthen of debt in each country can best be appreciated by comparing it with the national capital and income. It is, however, to be observed that the above Tables do not include local debt or taxes, without which it is impossible to institute a fair comparison. The following statement, therefore, includes all public burthens. The income or earnings of each nation are based on the principal industries of agriculture, manufactures, and commerce,[1] allowing also for extraordinary income from carrying trade, monies invested abroad, sums spent by travellers, etc.—

[1] See Table in Appendix.

	Income.	Taxation.	Taxes to Income.	Capital.	Debts.	Debt to Capital.	Capital per Inhabitant.	Income per Inhabitant.
United Kingdom .	£1,120,000,000	£138,000,000	12½ p. c.	£8,880,000,000	£890,000,000	10 p. c.	£260	£33
France . . .	930,000,000	152,000,000	16 ,,	7,334,000,000	1,070,000,000	14½ ,,	202	25
Germany . .	702,000,000	106,000,000	15 ,,	4,442,000,000	215,000,000	5 ,,	108	17
Russia . . .	560,000,000	90,000,000	16 ,,	3,024,000,000	682,000,000	23 ,,	38	7
Austria-Hungary .	423,000,000	82,000,000	19 ,,	2,780,000,000	419,000,000	15 ,,	80	12
Low Countries .	251,000,000	25,000,000	10 ,,	2,230,000,000	120,000,000	5½ ,,	233	26
Italy . . .	226,000,000	79,000,000	35 ,,	1,645,000,000	405,000,000	25 ,,	54	8
Spain and Portugal	217,000,000	40,000,000	18 ,,	1,525,000,000	635,000,000	42 ,,	76	11
Scandinavia . .	138,000,000	11,000,000	8 ,,	1,107,000,000	24,000,000	2¼ ,,	138	17
Europe . . .	£4,567,000,000	£723,000,000	16 p. c.	£32,967,000,000	£4,460,000,000	13½ p. c.	£112	£16
United States .	1,449,000,000	146,000,000	10 ,,	6,359,000,000	521,000,000	8 ,,	146	33
South America .	140,000,000	44,000,000	32 ,,	950,000,000	206,000,000	21 ,,	38	6
India . . .	460,000,000	58,000,000	13 ,,	1,380,000,000	144,000,000	10½ ,,	7	2
British Colonies .	144,000,000	30,000,000	20 ,,	1,150,000,000	132,000,000	11½ ,,	135	18
World . . .	£6,760,000,000	£1,001,000,000	15 p. c.	£42,806,000,000	£5,463,000,000	12½ ,,	£72	£11

The United Kingdom (without the colonies) stands for one-fifth the capital value of the globe, and its inhabitants possess, per head, nearly three times the average wealth of the rest of Europe. It is a remarkable coincidence that the average income per inhabitant in the United States is the same as in the United Kingdom. The annual accumulation of wealth, however, appears from the census returns of 1870, as compared with 1850, to be much larger in the United States, namely, £165,000,000. The total accumulations of Europe average £324,000,000 per annum, as shown by the amount of new capital raised in the seven years ending December 31, 1877, viz.—

Government loans	£1,292,000,000
Railway and other companies . .	977,000,000
	£2,269,000,000

Although Great Britain is the richest nation in Europe, or in the world, our people are not so thrifty as the French, and hence the annual accumulation is greater in France, as shown by the increase of property subject to legacy or to succession duty, viz.—

	France.	Per inhab.	Great Britain.	Per inhab.
1826 . .	£53,494,000	35 shillings	£49,100,000	45 shillings
1859 . .	87,758,000	48 ,,	94,688,000	67 ,,
1877 . .	188,070,000	101 ,,	159,200,000	96 ,,

The accumulation of wealth in all countries may be estimated as follows:—

United States . . .	£165,000,000 per annum
France.	75,000,000 ,,
Great Britain . . .	65,000,000 ,,
Germany	40,000,000 ,,
Other Countries . . .	145,000,000 ,,
	£490,000,000 ,,

As the accumulation of public debt during the last thirty years averaged £130,000,000, it cannot be doubted that the annual savings of mankind are three or four times greater than the growth of debt. The Savings Banks of Europe may be said to belong to the working-classes, and under this head alone we find an annual increase of £12,000,000 (see Table in Appendix), the total deposits for 1878 comparing with those of 1860 as follows:—

Deposits in 1860	£126,213,000
Do. in 1878	341,430,000
Increase in eighteen years .	£215,217,000

There are safe grounds for asserting that the net profits of the British nation have averaged £50,000,000 per annum since the battle of Waterloo, and in summing up the accumulation of sixty-five years, amounting to £3,440,000,000, we see how erroneous were the predictions of eminent statesmen in the House of Commons, in 1815, "that national bankruptcy was inevitable in view of a public debt of £917,000,000." The accumulation of British wealth in the interval consists as follows:—

Reduction of National Debt . .	£140,000,000
Railways, Harbours, Shipping . .	930,000,000
Houses and Buildings (*Builder*) . .	1,220,000,000
Foreign Loans and Investments . .	1,150,000,000
	£3,440,000,000

It is not so easy to estimate the savings of other nations in the same interval, except as regards France, already stated. The growing wealth of France is still more emphatically established by the insurance valuation (£7,334,000,000), which shows her to be the only country in Europe approaching Great Britain in value.

Life insurance returns are more or less important as affording an indirect proof of the average wealth of people, as follows :—

	Lives insured.	Amount.	Average per life.
United States . .	1,103,000	£541,000,000	£490
United Kingdom .	810,000	387,000,000	480
France . . .	198,600	78,000,000	390
Germany	560,000	88,000,000	160

In order to arrive at the precise amount of a nation's earnings or profits, it would be necessary to have exact returns of losses from bankruptcy and from repudiated loans. Under the latter head Great Britain has recently lost £200,000,000, and the average of six years' bankruptcy returns has been thus :—

Liabilities . .	£17,200,000	
Assets . . .	6,100,000	36 per cent
Loss . .	£11,100,000	64 „

The average of ten years in France shows a much worse result for creditors, the assets being only 21 per cent of the total liabilities (see Bankruptcy Tables for Great Britain, France, and United States, in Appendix).

VII.—COMMERCE AND SHIPPING.

In the last fifty years commerce has grown twelve times faster than population, having multiplied eight-fold, as follows :—

	1830.	1878.	Increase.
United Kingdom . .	£88,000,000	£601,000,000	7 fold.
British Colonies . .	21,000,000	322,000,000	14½ „
British Empire (Forward)	£109,000,000	£923,000,000	8½ „

	1830.	1878.	Increase.
Brought forward .	£109,000,000	£923,000,000	8½ fold
France	42,000,000	368,000,000	9 „
Germany	39,000,000	319,000,000	8 „
Low Countries . . .	30,000,000	275,000,000	9 „
United States . . .	35,000,000	225,000,000	6½ „
Austria	12,000,000	160,000,000	13 „
Russia	24,000,000	128,000,000	5½ „
South America . .	14,000,000	101,000,000	7 „
Italy	11,000,000	98,000,000	9 „
Scandinavia . . .	8,000,000	66,000,000	8 „
Spain and Portugal . .	11,000,000	39,000,000	3½ „
Turkey and East . .	15,000,000	85,000,000	6 „
World	£350,000,000	£2,787,000,000	8 „

The commerce of the world is made up of two unequal items—imports and exports—as follows:—

	Imports.	Exports.	Total.
British Empire .	£517,000,000	£406,000,000	£923,000,000
Other Countries .	948,000,000	916,000,000	1,864,000,000
	£1,465,000,000	£1,322,000,000	£2,787,000,000

As the exports of one country are the imports of another, their value should be equal, but for the charges of freight, commission, insurance, etc., which account for the imports appearing to be 11 per cent more than exports. If these charges be deducted, and the total amount of merchandise exchanged be taken as £1,322,000,000, the figures will stand thus:—

	Imports.	Exports.	Difference.
British Empire .	£466,000,000	£406,000,000	£60,000,000 imports.
Other Countries .	856,000,000	916,000,000	60,000,000 exports.

If we take the United Kingdom without the colonies we find the balance has for four years averaged £130,000,000 per annum against us; but it is hard to say what value to

attach to the balance of trade, which would make Russia appear more prosperous than Great Britain. In the subjoined Table is summed up the trade of the world for the last ten years, that is, the aggregate of imports and exports (1868-1878):—

	Imports.	Exports.	Surplus imports.
United Kingdom .	£3,491,000,000	£2,703,000,000	£788,000,000
France . . .	1,730,000,000	1,690,000,000	40,000,000
Germany . . .	1,650,000,000	1,180,000,000	470,000,000
Low Countries . .	1,403,000,000	1,193,000,000	210,000,000
United States . .	1,040,000,000	960,000,000	80,000,000
Austria . . .	708,000,000	657,000,000	51,000,000
Russia . . .	620,000,000	530,000,000	90,000,000
Italy . . .	489,000,000	437,000,000	52,000,000
Scandinavia . .	299,000,000	238,000,000	61,000,000
Spain and Portugal .	224,000,000	194,000,000	30,000,000
Greece . . .	35,000,000	23,000,000	12,000,000
			Surplus Exports.
The East. . .	1,210,000,000	1,350,000,000	£140,000,000
British Colonies .	1,310,000,000	1,550,000,000	240,000,000
South America. .	517,000,000	557,000,000	40,000,000
	£14,726,000,000	£13,262,000,000	

Thus the balance of trade against mankind was £146,000,000 per annum during the said ten years, viz.—

Annual Imports	£1,472,000,000
Do. Exports	1,326,000,000
Surplus Imports	£146,000,000

This is precisely the same amount of 11 per cent for charges on exports already alluded to.

Shipping.—The shipping of the world has by no means increased in the same degree as commerce, since it has only trebled in fifty years; but as steamers make three voyages in the same time as one by sailing vessels, the facilities for the carrying trade are ample. There is, moreover, a notable saving in the number of ships and

seamen. But for steam navigation we should require 33,000 more vessels and 550,000 more seamen than at present, which would increase the cost of all merchandise 6 per cent, without any benefit to the producer or consumer. The actual tonnage of the world—that is, of sea-going vessels—is as follows :—

Flag.	Steamers. Tons.	Sailing vessels. Tons.	Total tonnage.	Average size of vessels. Tons.
British	3,363,000	5,807,000	9,170,000	390
United States	1,127,000	3,411,000	4,538,000	402
Scandinavian	206,000	2,003,000	2,209,000	245
Italian	98,000	1,292,000	1,390,000	296
German	227,000	876,000	1,103,000	232
French	334,000	725,000	1,059,000	254
Spanish	175,000	565,000	740,000	235
Dutch	135,000	402,000	537,000	344
Russian	106,000	392,000	498,000	257
Greek	7,000	427,000	434,000	204
Austrian	81,000	339,000	420,000	395
South American	59,000	95,000	154,000	435
Portuguese, Egyptian, etc.	83,000	146,000	229,000	318
	6,001,000	16,480,000	22,481,000	340

Since the opening of the Suez Canal in 1869, steamers have increased so fast, that sailing vessels are declining in importance; the ratio of the tonnage of all flags collectively being as follows :—

	1872.	1879.
Steam tonnage	20 per cent	28 per cent.
Sailing „	80 „	72 „

It appears that in the same interval the number of vessels afloat has risen 5 per cent, and the gross tonnage 18 per cent, the average size of vessels being notably increased, as shown in the following Table :—

	1868.	1879.	Increase.
Vessels afloat .	60,864	63,979	5 per cent
Tons ,,	18,983,600	22,481,000	18 ,,
Size of vessels . .	300 tons	351 tons	17 ,,

As regards ocean steamers, they seem to have increased 25 per cent in size, the average of those passing through the Suez Canal in 1879 being 2066 tons against 1612 tons in the first year that the canal was opened. Compared with forty years ago, the tonnage to each vessel on the high seas has more than doubled, which has caused an increased efficiency of seamen, as appears from the returns of British shipping :—

	1839.	1879.
Tons to vessel . .	110	390
Tons to seamen . .	16	26

The vessels of the United Kingdom, without colonial, show an average of 32 tons per seaman; so that it may be said one sailor now does the same work that required two in 1839. The same is probably true of other flags.

In the following Table is shown the growth of the mercantile marine of the world in the last ten years, side by side with the increase of commerce in each country :—

	Shipping.			Commerce.		
Flag.	1868.	1879.	Increase.	1868.	1879.	Increase.
British Empire . .	7,205,000	9,170,000	27 p. c.	£764,000,000	£923,000,000	21 p. c.
United States . .	4,352,000	4,538,000	4 ,,	132,000,000	225,000,000	68 ,,
Scandinavian . .	1,470,000	2,209,000	50 ,,	40,000,000	66,000,000	65 ,,
Italian	883,000	1,390,000	58 ,,	66,000,000	98,000,000	48 ,,
German	960,000	1,103,000	14 ,,	230,000,000	320,000,000	39 ,,
French	1,053,000	1,059,000	1 ,,	244,000,000	368,000,000	51 ,,
Spanish . . .	402,000	740,000	85 ,,	32,000,000	38,000,000	18 ,,
Holland . . .	540,000	537,000	...	67,000,000	105,000,000	57 ,,
Russian, Austrian, etc. .	2,118,000	1,735,000	...	475,000,000	644,000,000	35 ,,
	18,983,000	22,481,000	18 p. c.	£2,050,000,000	£2,787,000,000	36 p. c.

The above Table shows that shipping has grown in only half the ratio of commerce since 1868. Nevertheless, the carrying trade has increased three times as much as the tonnage of vessels, and in a much greater degree than commerce itself, as shown by the entries of sea-going vessels in the ports of all nations :—

Ports.	1866.	1877.	Increase.
British	15,612,000 tons	25,765,000 tons	68 p. c.
French	5,711,000 ,,	9,005,000 ,,	60 ,,
German	3,827,000 ,,	5,584,000 ,,	44 ,,
Italian	3,395,000 ,,	4,042,000 ,,	18 ,,
Scandinavian . .	3,840,000 ,,	4,420,000 ,,	16 ,
Dutch and Belgian	2,860,000 ,,	5,305,000 ,,	88 ,,
Austrian . . .	3,210,000 ,,	4,202,000 ,,	30 ,,
Russian	2,705,000 ,,	4,750,000 ,,	72 ,,
Spanish	1,290,000 ,,	2,777,000 ,,	110 ,,
United States . .	7,782,000 ,,	12,510,000 ,,	63 ,,
South American .	3,600,000 ,,	4,500,000 ,,	25 ,,
British Colonies .	14,130,000 ,,	20,630,000 ,,	42 ,,
	67,962,000 ,,	103,390,000 ,,	50 ,,

No less than 53 per cent of the carrying trade of the globe is done on British bottom, although our shipping constitutes but 40 per cent of the tonnage of vessels afloat, which is a proof of the greater efficiency of our mercantile marine as compared with that of other nations. The entries in all ports (see Table in Appendix) sum up as follows for the year 1877 :—

	Tons.
British bottom . . .	54,240,000
Other flags . . .	49,150,000
	103,390,000

Steam navigation is one of the great triumphs of the nineteenth century, the first steamer that ever ventured on the high seas being the Rob Roy, from Glasgow to Belfast,

in 1815. The first to cross the Atlantic was the Savannah, in 1819, which made the voyage from New York to Liverpool in twenty-six days. Since then the most remarkable transatlantic voyages have been the following:—

Date.	Steamer.	Time.
1837	Great Western	19 days
1840	Britannia	14 „ 13 hours
1843	Great Britain	14 „ 1 „
1875	City of Berlin	7 „ 18 „
1876	Britannia	7 „ 11 „

Steamers probably transact at present 40 per cent of the carrying trade of the world, including both the high seas and coasting traffic, the entries of sea-going vessels in all ports representing imperfectly the utility of steamers. Great Britain, for example, has 37 per cent of her shipping composed of steamers, and yet only 28 per cent of her port entries are steam tonnage. The following Table shows the ratio of steam tonnage in the entries of all nations:—

	1866.	1877.
United Kingdom	19 per cent.	28 per cent.
France	22 „	32 „
Germany	24 „	32 „
Low Countries	23 „	35 „
Austria	25 „	37 „
Italy	24 „	28 „
United States	16 „	18 „
Average	20 „	29 „

The returns for 1877 showed the carrying-trade on the high seas as follows:—

	Tons.	Ratio.
By Steamers	30,110,000	29 per cent
„ Sailing-vessels	73,280,000	71 „
	103,390,000	

It is very surprising that these returns give only six voyages each to the steamers, and four and a half to the sailing-vessels afloat, whereas the former should make three times as many as the latter. This may, however, arise from the steamers making longer voyages than the sailing-vessels. It is also worthy of remark that since the increase of steamers there is an increased proportion of arrivals in ballast, viz.—

Entries in	1866. In ballast.	1877. In ballast.
British Ports . . .	12 per cent	12 per cent
French „ . . .	4 „	6 „
Italian „ . . .	10 „	20 „
All Europe . . .	24 „	26 „

The increase of ballast indicates that there is more shipping than commerce has need of. The ratio in the United States is lower than that of Europe, being only 20 per cent. The value of sea-borne cargoes in 1866 averaged £20 per ton, and in 1877 to 1878 only £17, but such was the increased activity of later years that every ton of shipping afloat in 1878 stood for £60 of the world's commerce, as against £52 in 1866, showing an increase of 16 per cent in the usefulness of the mercantile navy of the world.

In comparing tonnage with population we find that Great Britain is second only to Scandinavia, as shown in the subjoined Table, which also shows that the ratio of steamers to total shipping is greater in ours than in any other marine :—

	Shipping per 100 inhabitants. 1868.	1879.	Proportion of steamers.
Scandinavia . .	20 tons	24 tons	9 per cent
United Kingdom .	19 „	22 „	37 „
United States . .	12 „	10 „	25 „
Italy . . .	4 „	5 „	7 „
Spain . . .	2½ „	4½ „	23 „
France . . .	3 „	2¾ „	32 „
Germany . .	2½ „	2½ „	20 „

Light and harbour charges average two shillings per ton in European ports, being higher in England than on the Continent; a vessel, for example, of 1000 tons is subject to the following charges:—

At Liverpool	£133
„ London	125
„ Hamburg	110
„ Antwerp	93
„ Amsterdam	81

In forty years the world has more than doubled the number of lighthouses, in this manner diminishing the dangers of sea navigation. Canada has built ninety-six in the last ten years, Japan eleven, and Chile has put up lights at the most dangerous passes in Magellan's Straits. This explains in some measure why the loss of life from shipwreck has not increased in equal ratio (see Lloyd's Register) with the growth of shipping or of ocean traffic. Taking the average of three years, in comparison with three years of the last decade, we find the increase has been as follows:—

	Increase.
Loss of Life	10 per cent.
Tonnage Afloat	18 „
International Commerce	36 „
Ocean Traffic	50 „

In the following Table are shown the lighthouses of all nations, and their increase since 1840:—

	1840.	1878.
United Kingdom	317	410
France	138	210
Scandinavia	196	205
Italy	55	121
Spain and Portugal	22	108
Russia	63	85
Carry forward	791	1139

	1840.	1878.
Brought forward . .	791	1139
Greece and Turkey . . .	38	77
Low Countries	36	73
Germany	24	25
Europe	889	1314
United States	220	632
Canada	41	450
South America	17	44
Africa	23	57
East Indies	22	72
China and Japan	...	77
Australia	10	45
West Indies, Canaries, etc. .	43	110
	1265	2801

In British waters the services of the Lifeboat Association may be judged from the fact that the society has saved 26,900 lives since its foundation in 1824.

VIII.—MANUFACTURES.

The march of civilisation has been in the present century to some degree identified with the progress of manufactures. The industries that now occupy 12,500,000 of workmen in Europe were in their infancy at the period of Waterloo, and since that time the countries most advanced in manufactures have been the most prosperous. If we sum up all branches of manufacture (including mining), we find the result as follows:—

	Operatives.	Product.	Per operative.
United Kingdom . .	2,930,000	£665,000,000	£224
France	1,936,000	416,000,000	220
Germany . . .	2,781,000	286,000,000	103
Russia	1,500,000	160,000,000	106
Austria	1,100,000	130,000,000	120
Carry forward .	10,247,000	£1,567,000,000	

	Operatives.	Product.	Per operative.
Brought forward	10,247,000	£1,567,000,000	
Low Countries . .	1,180,000	117,000,000	100
Spain and Portugal .	610,000	72,000,000	119
Italy	390,000	42,000,000	108
Scandinavia . . .	220,000	20,000,000	90
Europe	12,647,000	£1,908,000,000	£156
United States . .	2,704,000	846,000,000	312
Colonies, etc. . .	500,000	50,000,000	100
Total .	15,851,000	£2,804,000,000	£180

Of the textile manufactures, employing 3,500,000 workmen, and representing one-fourth of the total value, cotton and wool have by turns held the foremost place; at present they are almost equal.

	Cottons.	Woollens.	Total.
United Kingdom . .	£95,000,000	£60,000,000	£155,000,000
France	20,000,000	48,000,000	68,000,000
Germany . . .	22,000,000	26,000,000	48,000,000
Russia	21,000,000	20,000,000	41,000,000
Low Countries . .	13,000,000	19,000,000	32,000,000
Austria	13,000,000	8,000,000	21,000,000
Italy	5,000,000	3,000,000	8,000,000
Spain, Switzerland, etc. .	13,000,000	10,000,000	23,000,000
	£202,000,000	£194,000,000	£396,000,000
United States . . .	48,000,000	36,000,000	84,000,000
India	7,000,000	...	7,000,000
	£257,000,000	£230,000,000	£487,000,000

Cotton.—The cotton crop of the world reaches 3100 million lbs., of which the United States produce two-thirds, the rest being made up between India, Egypt, and Brazil. The crop is worth, at sixpence per lb., almost £80,000,000 sterling, and the value of cotton manufactures is just three times that of the raw material. The factories

produce 6,000,000 miles of cotton cloth yearly, the consumption averaging thirty yards per inhabitant in England, twenty in China, and forty in America. The world could consume 14 or 15 million miles of cotton cloth per annum. The actual number of spindles is 70 millions, employing 1,330,000 operatives, viz.—

	Operatives.	Spindles.	Spindles to operative.
Great Britain . .	480,000	40 millions	83
United States . .	160,000	10½ ,,	66
France	210,000	5 ,,	24
Germany . . .	130,000	6 ,,	46
Russia	180,000	3½ ,,	20
Switzerland, Austria, India	250,000	5 ,,	20
	1,330,000	70 ,,	54

From the above may be seen the superior efficiency of English operatives, who show twice as many spindles per head as on the Continent, and 25 per cent more than in the United States.

Wool.—The clip has quintupled since 1830, being now 1590 million lbs., which, when scoured, gives 850 million lbs. of clean wool.

	1880.	1878.	Increase.
Australia . .	6 million lbs.	350 million lbs.	58 fold
River Plate . .	22 ,, ,,	240 ,, ,,	11 ,,
South Africa .	2 ,, ,,	48 ,, ,,	24 ,,
United States .	10 ,, ,,	208 ,, ,,	21 ,,
Europe . .	280 ,, ,,	740 ,, ,,	2½ ,,
	320 ,, ,,	1586 ,, ,,	5 ,,

Although the manufactures of woollen and cotton fabrics represent an almost equal amount in value, the number of operatives in woollen mills is only two-thirds of that engaged in cotton. The woollen industry of the world shows thus:—

	Operatives.	Spindles.	Consumption.
Great Britain . .	280,000	5,100,000	380 million lbs.
France	170,000	2,500,000	380 ,, ,,,
Germany . . .	120,000	1,800,000	165 ,, ,,
United States .. .	120,000	1,400,000	250 ,, ,,
Russia, Austria, etc. .	223,000	1,800,000	400 ,, ,,
	913,000	12,600,000	1575 ,, ,,

France and Great Britain consume the same quantity of wool, but that used in France is unscoured River Plate, of which only 30 per cent turns out wool, whereas in England we consume mostly native, or washed Australian; hence the woollen manufactures in Great Britain are 25 per cent more than in France.

Silk.—Although a Franciscan friar brought silkworms from China to Europe in the sixth century, the industry was not known in France till 1480. Patents of nobility were conferred by Henri Quatre on the first silk-spinners at Lyons, which is still the chief seat of this industry. The annual production of silk is estimated as follows:—

	Silk.	Value.
Italy . . .	7,500,000 lbs.	£10,200,000
France and Spain .	2,000,000 ,,	3,000,000
China . . .	6,500,000 ,,	8,000,000
Japan, India, etc. .	7,000,000 ,,	8,800,000
	23,000,000 lbs.	£30,000,000

In recent years there has been a decline in the silk manufactures of France and England, as other countries have begun to make for themselves, the industry now standing as follows:—

	Operatives.	Products.
France	170,000	£28,000,000
Great Britain . .	46,000	8,000,000
Germany . . .	80,000	10,000,000
Carry forward .	296,000	£46,000,000

	Operatives.	Products.
Brought forward	296,000	£46,000,000
Russia	70,000	9,000,000
Switzerland . . .	30,000	5,000,000
Italy	25,000	5,250,000
United States . .	20,000	6,000,000
Austria, etc. . . .	65,000	8,750,000
	506,000	£80,000,000

Linen.—Russia grows half the flax, and the factories of Great Britain consume one-third of what is grown in the world, viz.—

	Production.	Consumption.	Value of Manufactures.
Russia . .	250,000 tons	90,000 tons	£4,200,000
Great Britain	26,000 „	136,000 „	22,400,000
France . .	50,000 „	70,000 „	12,100,000
Germany . .	15,000 „	35,000 „	5,800,000
Low Countries	80,000 „	65,000 „	9,100,000
Austria, etc. .	35,000 „	60,000 „	9,400,000
	456,000 „	456,000 „	£63,000,000

The factories of the world contain 3,500,000 spindles, of which number the United Kingdom stands for nearly half. Ireland was for more than a century the chief seat of linen manufacture, but the operatives so long resisted the introduction of machinery that other countries, especially Scotland, soon left her in the background, Dundee exporting, in Mr. Porter's time, more linen than the whole of Ireland.

Lace.—Heathcote's machinery for making lace has been of such utility that Nottingham now produces more than the whole of Europe :—

	Hands.	Product.	Per head.
Nottingham . .	10,500	£6,120,000	£583
European Continent	535,000	5,780,000	11

If we sum up the textile industries of the world, we find as follows :—

	Operatives.	Product.	Per operative.
Great Britain .	1,006,000	£196,000,000	£195
Continent . .	2,013,000	335,000,000	167
United States .	410,000	82,000,000	200
	3,429,000	£613,000,000	£180

Textile industry constitutes nearly one-fourth of the manufactures of the age, and is progressing faster than any other occupation of mankind (except military service). Forty years ago Great Britain produced two-thirds of the total dry goods of the world; at present her manufactures are barely one-third, although her factories turn out twice as much as in 1840:—

	Cotton consumed.	Wool consumed.	Total.
1840 .	554 million lbs.	198 million lbs.	752 million lbs.
1877 .	1186 „	366 „	1552 „

The increase of production throughout the world has caused a great decline in price, thus extending the field of consumption. Improved machinery has tended still more in this direction; and while the cost of manufacture has diminished, the earnings of operatives have increased, as shown by official statement in England, as follows:—

	1842.	1860.
Spindles to operative .	29	70
Wages for yarn-spinning .	55 pence per lb.	47 pence
Average earnings . .	20s. per week	31s. per week

Every year the world is raising more wool and cotton: the clip of Australia and the River Plate has risen 33 per cent since 1870; and last year's cotton crop in the United States was the largest ever known.

Hardware.—The present is emphatically an age of iron, the consumption of that metal having increased thirty-fold since the days of Buonaparte. The arts of peace are more indebted to iron than to anything else; and Englishmen

have been the first to establish ironworks in various parts of the world. Messrs. Cockerill, for example, established foundries in Germany in 1780; in Belgium in 1816, and a factory for Bessemer steel in Hungary in 1876. An Englishman named Neville has similar works in Italy; and the principal ironworks of Bilbao, in Spain, also belong to English companies. An Englishwoman named Hargreaves founded the first steamboat arsenal at Rio Janeiro; and the first foundries at Pernambuco, Rio Grande, Buenos Ayres, and Montevideo, were those of our countrymen, Messrs. Bowman, Gardner, Marshall, Hardy, etc. The invention of railways and the building of iron vessels have caused the production of iron to treble in the last thirty years.

	1850.	1877.
Great Britain .	2,250,000 tons	6,608,000 tons
United States .	560,000 ,,	2,360,000 ,,
Germany . .	402,000 ,,	1,540,000 ,,
France . .	408,000 ,,	1,520,000 ,,
Belgium . .	140,000 ,,	420,000 ,,
Russia . .	220,000 ,,	415,000 ,,
Austria . .	240,000 ,,	470,000 ,,
Sweden . .	140,000 ,,	340,000 ,,
	4,360,000 ,,	13,673,000 ,,

In this branch of industry England is still equal to all the rest of the world collectively. A revolution was caused by the invention of Bessemer steel, which was at first supposed to threaten the supremacy of Great Britain; but she still produces nearly half the steel of the world.

Great Britain . . .	752,000 tons
United States . . .	526,000 ,,
France	262,000 ,,
Germany	242,000 ,,
Sweden, Belgium, etc. . .	103,500 ,,
	1,885,500 ,,

The sabres of Milan and Toledo have given place in the world's markets to Sheffield cutlery, nor is there any part of the globe in which the hardware of Great Britain does not find a market. Iron and steel are in the present time almost as necessary as bread, and such is the value of manufacturing industry, that although pig-iron is worth only £3 per ton, it is susceptible of a far higher value than gold: an ounce of watch-springs is worth 630 times the same weight of gold-dust.

Machinery.—When Mr. Boulton of the machine works at Soho was asked what he sold, he replied, "I sell here what men most covet, Power." In effect, the adoption of machinery and steam has given mankind an accession of power beyond calculation. The United States, for example, make a million sewing-machines yearly, which can do as much work as formerly required 12 million women working by hand. A single shoe-factory in Massachusetts turns out as many pairs of boots as 30,000 bootmakers in Paris. Again, at Birmingham, where Gillot sold his first steel pens a few years ago at a shilling apiece, the factories now produce 32 million weekly at a penny a dozen. Steam-power multiplies indefinitely the forces of a nation, and in this respect Great Britain is ahead of the rest of the world. It was estimated in 1876 that there were 100,000 stationary engines in the United Kingdom, which, at an average of 20-horse, would represent a total of 2,000,000 horse-power. Summing up the aggregate of stationary and locomotive engines, and putting down the latter at 100-horse each, we find that the steam-power of the world stands thus:—

	Stationary. Horse-power.	Locomotive. Horse-power.	Steamers. Horse-power.	Total horse-power.
United Kingdom	2,000,000	1,368,000	460,000	3,828,000
United States .	1,216,000	1,777,000	160,000	3,153,000
Carry forward	3,216,000	3,145,000	620,000	6,981,000

	Stationary. Horse-power.	Locomotive. Horse-power.	Steamers. Horse-Power.	Total horse-power.
Brought forward	3,216,000	3,145,000	620,000	6,981,000
France . .	925,000	621,000	45,000	1,591,000
Germany . .	650,000	739,000	53,000	1,442,000
Low Countries .	560,000	70,000	30,000	660,000
Austria . .	80,000	359,000	15,000	454,000
Other countries .	680,000	1,186,000.	77,000	1,943,000
	6,111,000	6,120,000	840,000	13,071,000

The stationary engines on the Continent have multiplied fifteen-fold since 1850.

Shipbuilding.—At the beginning of the century the backwoods of America afforded the chief supply of material for shipbuilding, and it seemed as if the carrying trade of the world would be monopolised by the United States, whose vessels were preponderant in the Atlantic, Pacific, and Indian Oceans. With the invention of iron ships Great Britain again obtained the mastery of the seas, her dockyards at present turning out twice as many new vessels yearly as all other nations in the aggregate. The growth of shipping in the last ten years has been as follows :—

	Tons.
1868. Shipping of all flags	18,983,000
1878. ,, ,, ...	22,481,000
Increase . . .	3,498,000
Built in United Kingdom	3,789,500
,, British Colonies	1,257,000
,, Foreign countries	2,400,000
New vessels . . .	7,446,500
Lost or broken up	3,948,500
Increase . . .	3,498,000

In the above interval of ten years the dockyards of the Clyde built 2,000,000 tons shipping, worth £40,000,000

sterling. The yard of John Elder and Company has for some years turned out more tonnage per annum than the whole of Queen Elizabeth's fleet that defeated the Spanish Armada. Yet it is hardly forty years since Mr. Scott Russell was told that "to build iron ships was contrary to nature." So late as 1860 we built only 65,000 tons of iron ships in the year; whereas in 1878 (notwithstanding the depression of trade) we turned out six times that amount. The following Table shows the most renowned steamers built in the United Kingdom since 1840:—

Year.	Name.	Built at	Tonnage.	Horse power.
1840	Britannia	Greenock	1,150	440
1843	Great Britain	Bristol	3,270	500
1855	Persia	Glasgow	3,300	900
1858	Great Eastern	London	18,915	2600
1874	Britannia	Belfast	5,004	760
1875	City of Berlin	Greenock	5,491	1000

Builders have made great improvements, not only as regards speed, but also in economy of fuel. Instead of 115 tons coal per diem, the Inman steamers now burn only 65 tons. Probably the steamer that has attained the greatest speed is Baroness Rothschild's steel yacht Gitana, going twenty-four miles an hour, unless it be that of the Viceroy of India, which is said to have reached almost twenty-five miles. The cost of iron vessels has fallen in a few years 40 per cent: they can now be built on the Clyde at £13 per ton, or steamers at £16, including machinery. It may be said that we build at present (including the colonies) nearly 600,000 tons per annum, viz.—

	1878.
Iron vessels	389,000 tons
Wooden do.	176,000 „
	565,000

	1878.
United Kingdom .	427,000 tons
Colonies . .	138,000 „
	565,000 „

According to the returns of ten years it appears that one-tenth of the vessels are built for foreign flags. The average size of vessels has increased 40 per cent in fifteen years, the returns of builders in the United Kingdom showing as follows:—

	Vessels built.	Tonnage.	Average.
1860-68 . .	3103	1,590,000	515 tons
1869-77 .	4264	3,075,000	720 „

While our dockyards are building vessels for the world, such a depression has befallen this industry in the United States that the number of workmen in the steamboat yards of New York fell from 15,000 in 1860 to 700 in 1870.

Wages.—The earnings of the working classes cannot properly be estimated without taking into account the cost of food, which is in some countries almost twice as great as in others. In Stockholm, for example, a family of five persons can live as well on £44 per annum as for £60 in Paris, or £80 in London. If we eliminate rent, and compare merely the food and wages of an artisan, we find as follows:—

	Wages per week.	Food per week.	Ratio.
United States .	48 shillings	10 shillings	100 to 21
Great Britain .	33 „	11 „	100 „ 33
France . .	20 „	8 „	100 „ 40
Belgium . .	22 „	10 „	100 „ 45
Germany . .	18 „	9 „	100 „ 50
Italy . . .	13 „	8 „	100 „ 64
Spain . . .	15 „	10 „	100 „ 67

The above Table allows the same quantity of bread, meat, cheese, milk, coffee, etc., in all countries; but as Spaniards and Italians have cheaper food, in the form of beans, chestnuts, rice, and fruit, the disparity of their earnings is not so much as seems. In fact, the three items of labour, wages, and food have a close relationship in all countries. The work done varies even more than wages; so that while British workmen are the highest paid in Europe, their labour is still the cheapest. Thus, the German factories pay their cotton-spinners 12s. a week, the English 17s.; and yet the working expenses of the former are, per spindle, 24 per cent higher than in England. In like manner the wages in France are lower, but the cost of working much greater than with us, viz.—

	Spindles.	Weekly expense.
France . .	10,000	£60
England . .	10,000	41

Mr. Mundella considers the superiority of the English workmen to arise in great measure from the system of wages by piecework; while, on the Continent, the operatives are paid by the day. The Germans work 90 hours, the English 60 per week; yet the production per head is equal. Russian mills work day and night—150 hours a week—but the production per spindle is the same as in England for 60 hours. It is estimated that two Englishmen produce as much as three Frenchmen, and that a Belgian working twelve hours does less than an Englishman in ten hours. Nothing but the cheaper price of food on the Continent could enable any of the above-mentioned countries to compete with us. The more we succeed in reducing the cost of food in England, the more we shall be assured of retaining our supremacy.

Friendly Societies.—No problem of the age attracts more

notice than how to improve the condition of the working classes; and in this they have materially aided themselves by means of Friendly Societies, of which the latest returns show as follows:—

	No. of Societies.	Members.	Annual Income.	Capital.
Great Britain	26,924	5,588,000	£17,580,000	£41,601,000
Germany	4,927	1,668,000	6,670,000	28,570,000
France	5,807	872,000	600,000	2,800,000
Italy	1,447	237,000	90,000	400,000
Low Countries	514	420,000	61,000	100,000
Denmark	721	98,500	44,000	75,000
Switzerland	632	98,000	60,000	310,000
Austria	128	73,000	288,000	600,000
Russia	477	34,000	40,000	250,000
Canada	40	...	...	5,100,000
Australia	58	21,350	995,000	2,740,000
	41,675	9,109,850	£26,428,000	£82,546,000

IX.—MINERALS.

During the present century the mineral resources of the world have been developed on a scale surpassing anything in history.

Coal.—Seventy years ago the world produced annually 9,000,000 tons coal, or one-thirtieth of the present quantity, the only coal-fields then working being those of England, although the mineral was known to exist in France, Germany, and North America. Coming down to the year of Queen Victoria's accession, we find the production had then risen to 40 million tons, of which Great Britain stood for four-fifths. Since the introduction of railways and steamers the quantity raised has quintupled, viz.—

	1842. Tons.	1878-79. Tons.
Great Britain . .	35 million	135 million
United States . .	2 ,,	55 ,,
Germany . . .	11 ,,	42 ,,
France	3½ ,,	17 ,,
Belgium . . .	3 ,,	15 ,,
Austria . . .	...	12 ,,
Russia . . .	...	7 ,,
China, Spain, Australia	1½ ,,	7 ,,
	56 ,,	290 ,,

In the last ten years the exports from Great Britain have doubled, and the consumption increased 30 per cent. According to the report of the Parliamentary committee, in 1871, there are still 90 milliard tons available, going no deeper than 4000 feet:[1] at an average consumption of 150 million tons there is, therefore, enough for 600 years to come. Electricity is, meantime, coming to supply in many ways the place of coal, which will doubtless tend to reduce the consumption. The average output per miner is greater in England than in other countries, viz.—

	Output.	Miners.	Per miner.
Great Britain	135,000,000 tons	440,000	306 tons
United States	55,000,000 ,,	190,000	288 ,,
Germany .	42,000,000 ,,	160,000	262 ,,
France . .	17,000,000 ,,	92,000	185 ,,
Belgium .	15,000,000 ,,	81,000	185 ,,

Great Britain exports 20 million tons, which would suffice to freight all the merchant navies of the world. In the best years of California or Australia the yield of gold in either of those countries never exceeded £15,000,000, whereas the coal-fields of Great Britain produce £47,000,000 per annum.

[1] The deepest coal-mine now working in Great Britain is Rosebridge, 2500 feet; the Lambert mine in Belgium goes down 3490 feet.

Iron.—Men still living can remember when the world produced annually but 450,000 tons of iron: at present the production reaches 14 million tons (see page 61), which is equivalent to 35 million tons iron ore, the ordinary yield being 40 per cent. There is hardly a part of the globe in which iron is not found, but it can be advantageously worked only where fuel is cheap and transport easy. So plentiful is the iron ore of England that the Cleveland district possesses as much as would take all our coal-fields to smelt. The production, as compared with population, is greatest in England, but the relative increase in other countries, since 1850, exceeds ours; we produce, nevertheless, as much pig-iron as all the rest of mankind collectively, and manufacture 40 per cent of the steel of the world. In the subjoined Table is shown the production of pig-iron for population:—

	1850.	1877.	Increase.
Great Britain	182 lbs. per inhab.	225 lbs. per inhab.	24 p. c.
United States	55 ,, ,,	132 ,, ,,	140 ,,
Germany .	27 ,, ,,	88 ,, ,,	224 ,,
France .	27 ,, ,,	96 ,, ,,	250 ,,
Belgium .	80 ,, ,,	190 ,, ,,	137 ,,
Sweden .	105 ,, ,,	170 ,, ,,	62 ,,
Austria .	18 ,, ,,	30 ,, ,,	67 ,,
Russia .	8 ,, ,,	11 ,, ,,	37 ,,
Average .	44 ,, ,,	110 ,, ,,	150 ,,

Copper.—In the Waterloo period the world depended on Cornwall for this mineral, until the Chilian copper-fields rose into importance. Subsequently, in 1842, some buffalo hunters discovered a rich mine near Lake Superior, which yielded 100,000 tons copper in twelve years. At present the production is as follows:—

Chile and Peru	34,000 tons
United States	15,000 ,,
Australia	14,500 ,,
Russia	5,600 ,,
England	5,200 ,,
Other Countries	19,000 ,,
	93,300 ,,

The price of copper has fallen 33 per cent since 1870, and the industry seems rapidly declining. There is nothing of copper manufactures in modern times to compare with the Colossus of Rhodes, the metal of which formed 900 camel-loads on its removal.

Lead.—The world produces 140,000 tons per annum, of which Cornwall gives one-half. The Spanish mines, near Cordoba, are worked by English companies, yielding over 30,000 tons. Missouri first produced lead in 1854, and gives at present 18,000 tons. This metal abounds in Bolivia and the lower ranges of the Andes.

Tin.—Cornwall has now to compete with Australia and Malacca in the production of this mineral. The tin factories of the world consume 24,000 tons annually, of which Great Britain stands for five-eighths.

Zinc. — Germany produces 60 per cent, Russia and Belgium the rest.

Quicksilver.—The Almaden mines in Spain have been famous since the time of the Romans, but are now surpassed by the Californian mine. The annual production is as follows:—

California	2000 tons
Spain	1000 ,,
Other Countries	300 ,,
	3300 ,,

Summary.—The mining industries of all nations (not including precious metals) give employment to 1,500,000 miners, as shown in the following Table :—

	Miners.	Products.	Per miner.	Output.
United Kingdom .	475,000	£66,000,000	£139	325 tons
United States . .	280,000	46,000,000	165	220 ,,
Germany . . .	204,000	16,000,000	75	230 ,,
France	206,000	13,000,000	63	105 ,,
Austria . . .	92,000	8,000,000	87	135 ,,
Belgium . . .	105,000	9,000,000	85	160 ,,
Russia . . .	80,000	4,000,000	50	100 ,,
Spain and Portugal .	48,000	6,000,000	125	50 ,,
Italy . . .	36,000	2,000,000	60	10 ,,
Scandinavia . .	29,000	1,000,000	34	34 ,,
	1,555,000	£171,000,000	£110	206 ,,

It appears from the above that Great Britain stands for one-third of the mining industry of the world. The mortality of miners in this country last year was 3 per 1000, say 1 killed for 103,000 tons of coal or iron extracted.

X.—RAILWAYS AND ENGINEERING.

Steam locomotion is a special feature of the nineteenth century. The same year, 1802, that saw the first steamer on the Clyde was that in which Trevithick and Vivian obtained a patent for driving coaches by steam. It was not, however, until 1825 that the first railway for passengers was opened from Stockton to Darlington, which proved so successful that in five years nearly 1000 miles were constructed. The dates of some of the earliest and of the most remarkable lines in various parts of the world are as follows :—

Year.	Line.	Length.	Country.
1825 .	Stockton and Darlington	56 miles.	England.
1827 .	Quincey and Boston	4 „	United States.
1828 .	Lyons and St. Etienne	...	France.
1835 .	Brussels and Malines	...	Belgium.
1837 .	St. Petersburg and Zarsko-Selo	17 „	Russia.
1851 .	Isthmus of Panama	66 „	Central America.
1860 .	Canadian Grand Trunk	1388 „	Canada.
1869 .	Union Pacific	3300 „	United States.

In the last thirty years English engineers have built 100,000 miles of railway, at a cost of £1,800,000,000, in the various quarters of the globe, the capital being in most cases found by English companies. Some of the contractors, in carrying out these works, have had armies of workmen more numerous than either of the contending hosts at Waterloo,[1] their annual payments for wages being equal to the revenue of a kingdom. The spread of railways is shown in the subjoined Table :—

Year.	Europe. Miles.	America. Miles.	Africa. Miles.	Asia. Miles.	Australia. Miles.	Total. Miles.
1830	550	340	...	...	...	890
1840	5,500	4,090	...	...	...	9,590
1850	24,200	20,160	40	...	...	44,400
1870	60,400	56,300	580	4500	1300	123,080
1880	95,271	92,840	2060	7870	3980	202,021

The railways that have proved most useful are those of Great Britain, as they carry per mile eight times as many passengers and 4½ times as much merchandise as the average of the rest of the world. The length and cost of the existing railways of the world are as follows :—

	Miles.	Cost.	Cost per mile.	Cap. per inhab.
United States . .	81,850	£970,000,000	£12,000	£22
Germany . . .	18,080	370,000,000	20,500	9
Carry forward	£99,930	£1,340,000,000		

[1] Mr. Brassey's men often numbered 80,000.

	Miles.	Cost.	Cost per mile.	Cap. per inhab.
Brought forward	£99,930	£1,340,000,000		
United Kingdom .	17,333	698,000,000	40,400	£21
Russia . . .	13,500	250,000,000	18,500	3
France . . .	13,150	430,000,000	32,800	12
Austria . . .	12,100	255,000,000	21,100	7
India . . .	7,540	114,000,000	15,100	0½
Canada . . .	5,850	70,000,000	12,000	18
Italy . . .	5,130	96,000,000	18,700	3½
South America . .	4,880	72,000,000	14,800	3
Spain and Portugal .	5,100	84,000,000	16,400	4
Scandinavia . .	4,414	29,000,000	6,800	3½
Low Countries . .	3,270	68,000,000	20,900	8
Australia . . .	3,980	44,000,000	14,000	17
Turkey and Egypt .	2,200	33,000,000	15,000[1]	2
Switzerland . .	1,550	24,000,000	15,000[1]	9
Algiers, Mexico, etc. .	2,094	31,000,000	15,000[1]	2
	202,021	£3,638,000,000	£18,000	£6

The railways of the United Kingdom carry nearly as many passengers as all the other railways of the world collectively, and about one-third of the goods traffic,[2] as shown thus:—

	Passengers.	Aliquot parts.	Goods, tons.	Aliquot parts.
United Kingdom .	632 million	44	245 million	29
Continent of Europe	575 ,,	39	340 ,,	42
United States .	195 ,,	13	201 ,,	24
India, Africa, etc. .	56 ,,	4	42 ,,	5
	1458	100	828	100

Comparing goods and passenger traffic, we find that in the United States each passenger stands for a ton of merchandise, whereas in Europe the proportion is less than half a ton. Although the English lines are the most costly in the world, they show a better carrying power as compared with capital than any others, viz.—

[1] No returns.

[2] The cargo carried in one month on English lines would suffice to freight all the shipping in the world.

		Passengers.		Goods.
United Kingdom, £100 Capital	=	90	+	35 tons
European Continent ,,	=	36	+	22 ,,
United States . ,,	=	20	+	21 ,,
India, Africa, etc. ,,	=	19	+	14 ,,
General Average . .		40		23 ,,

For the same reason the traffic earnings in Great Britain are much above the average of the world, as appears from the following statement of the traffic and earnings of all nations per mile:—

	Passengers.	Goods, tons.	Receipts.	Expenses.	Profit on capital.
United Kingdom .	36,500	13,850	£3,640	£1,928	4¼ p. c.
Low Countries .	23,100	12,200	2,330	1,435	3¾ ,,
Germany . .	11,100	7,450	2,380	1,490	4⅓ ,,
France . .	10,700	4,750	2,710	1,315	4 ,,
Italy . . .	5,750	1,480	1,260	840	2¼ ,,
Spain and Portugal	5,550	1,490	1,325	575	4⅓ ,,
Scandinavia . .	3,870	1,420	760	450	3¾ ,,
Austria-Hungary .	2,950	3,940	1,530	910	3 ,,
Russia . . .	2,610	2,305	2,084	1,380	3¾ ,,
United States .	2,450	2,505	1,250	830	3½ ,,
Canada . .	910	912	760	610	1¼ ,,
South America .	1,920	510	650	440	1½ ,,
India . . .	4,410	...	1,255	605	4½ ,,
World . .	7,300	4,140	£1,610	£990	3⅛ p. c.

Passenger traffic averages 10 miles to each passenger, at a cost of 15 pence. Goods traffic shows an average of one cent (halfpenny) per ton per mile in the United States, and one penny in Europe. Working expenses average for the world 60 per cent of the gross receipts, but in England only 53 per cent. The gross earnings of all the railways of the world are £6,250,000 weekly, and the net annual proceeds are equal to the earnings of all the vessels afloat (at

the usual estimate of £6 per ton),[1] the railway traffic being summed up thus:—

Gross earnings . . .	£325,000,000
Working expenses . . .	199,000,000
Net earnings . .	£126,000,000

It is, moreover, remarkable that the number of railway employees is about equal to that of the seamen engaged in the merchant shipping of the world, say approximately one million:—

	Shipping.	Railways.
Great Britain . . .	353,000 men	274,500 men
Other countries . . .	700,000 ,,	750,000 ,,
Total . .	1,053,000 ,,	1,024,000 ,,

Railway traffic is growing in all countries much faster than population, the English and French lines, for example, showing the following increase of net earnings per mile since 1850:—

	1850.	1878.	Increase.
United Kingdom	£1020	£1712	69 per cent.
France . .	1050	1395	33 ,,

In such countries as show the greatest traffic the ratio of passengers killed is the lowest. The following returns give the average for the last five years:—

PASSENGERS KILLED.

Spain, one in . . .	920,000
Russia ,, ...	1,310,000
Austria ,, ...	4,450,000
Italy ,, ...	4,580,000
France ,, ...	5,224,000
Belgium ,, ...	8,150,000

[1] Vessels afloat sum up 22,000,000 tons.

Sweden, one in . . .	8,940,000
Germany ,, . . .	11,060,000
United Kingdom,[1] one in .	11,688,000

Although our death-rate is lowest, the speed of our trains is greater than in other countries, the average of mail trains being as follows:—

Great Britain . . .	40 miles an hour
France	32 ,, ,,
Germany	30 ,, ,,
Belgium	25 ,, ,,
Italy	25 ,, ,,
Russia	21 ,, ,,

Latest returns of the locomotives of the world were published by Dr. Engel in 1872: if we add 25 per cent for the increase since then, and compare the goods and passenger traffic per locomotive in each country, we find as follows:—

	No. of locomotives.	Passengers per locomotive.	Goods per locomotive.
United Kingdom .	13,680	44,500	18,500 tons.
United States . .	17,770	11,000	11,400 ,,
Germany . . .	7,390	28,000	18,100 ,,
France . . .	6,210	23,000	10,000 ,,
Austria . . .	3,590	10,100	13,400 ,,
Russia . . .	3,560	9,100	8,000 ,,
Italy . . .	1,565	19,800	5,100 ,,
Other Countries . . .	7,435	...	... ,,
	61,200	24,300	13,500 ,,

The "life" of a locomotive is usually fifteen years, and the number annually turned out from the workshops averages 4000. The "life" of iron rails is ten years; that of steel twenty; and the railways in actual traffic have 30¼ million tons rails (say 150 tons per mile). The annual

[1] In 1873 it was found that the number of persons killed by lightning in England exceeded the deaths of railway passengers.

consumption, including 1,000,000 tons for new lines, is estimated at 4,000,000 tons; and as Bessemer rails are now produced at £6 per ton, Mr. Price Williams considers they effect a saving of £170,000,000 sterling in twenty years.

Although Europe and North America have already expended nearly £10 per inhabitant in the construction of railways, new lines are every year marked out, and those actually in construction sum up several thousand miles. Among the lines now projected (or actually begun), there are four of such magnitude as to rank among the greatest enterprises of this kind, viz.—

Railway.	Country.	Length.	Cost.	Per mile.
Euphrates Valley	Asia Minor	850 miles	£7,300,000	£8,600
Caspian and Bokhara	Tartary	1650 „	17,450,000	10,600
Canadian Pacific	Canada	2005 „	22,000,000	11,000
Trans-Andine	South America	152 „	1,810,000	12,000

The first-mentioned would bring our Indian Empire seven days nearer to England, and the estimated cost is low, the route traversing a plain devoid of engineering difficulties. The Tashkent and Bokhara is about to be actively pushed forward, under the auspices of the Russian Government. About 400 miles of the Canadian Pacific line are almost ready for traffic, the whole to be completed by 1890. The works are not yet commenced on the line from Mendoza to Chile, across the Andes; but the surveys show that the maximum incline is only 1 in 25, with a tunnel at the summit.

Engineering skill has had the widest field for exercise in making railways, and been attended with signal triumphs since the days of Stephenson. When that eminent engineer made the line from London to Birmingham, it was considered as great a work as the pyramid of Cheops;[1] yet it

[1] The Birmingham line involved 56 per cent more labour than the

was of easy construction compared with the following lines of more recent date :—

Railway.	Situation.	Over Sea-level.
St. Gothard . .	Alps	3,786 feet
Brenner . . .	„	4,475 „
Pedro-Segundo . .	Brazil	3,550 „
Mont Cenis . .	Alps	4,390 „
Union Pacific . .	Rocky Mountains	8,573 „
Oroya . . .	Andes, Peru	15,646 „

The last-named is not only the highest railway in the world, but the most arduous, having 63 tunnels in the Andes, and leaping from cliff to cliff by bridges that seem to hang in the air. It is, however, by no means so steep as the Righi line, in Switzerland, which resembles a staircase, having an incline of 1 in 4. This line is only four miles long, and ascends to the summit (4500 feet above Lake Lucerne), being provided with rack-and-pinion, clip-brakes, and cogged axles. The most remarkable underground line is the London Metropolitan, which cost £600 per yard. Much less arduous and expensive has been the New York Elevated Railway, which may be said to run in the air, through the most crowded streets, carrying 2,000,000 passengers monthly. The whole construction took 2200 tons of iron per mile, and cost only £44 per yard —say £78,000 a mile. A similar line, with electricity in place of steam as the motive power, is now about to be started by Professor Siemens, in Berlin.

Tunnels.—Telford made a tunnel 500 feet long for a canal in the Dee Valley (Wales), in the early part of the century, which was the forerunner of his Harecastle tunnel, two miles in length, constructed in 1824-1827. Many

Great Pyramid, yet Stephenson completed it in five years with 20,000 men, whereas the Pyramid took 100,000 men for twenty years.—*Smiles.*

similar works have since been made in connection with railways in various countries, the maximum cost being as follows:—

Great Britain	£145 per lineal yard
France	95 „ „
Switzerland	80 „ „

Meantime the first great work of this kind may be said to have been Brunel's tunnel under the Thames, completed in 1843, after nineteen years of labour. A rival undertaking, some years later, was the Chicago tunnel, under Lake Erie, for supplying that city with water. Next followed the Mont Cenis, carried out by Grattoni and Sommelier at a cost of £2,600,000, having cut out 2,000,000 tons of rock in thirteen years, and completed the tunnel in December 1870. All these have been surpassed by the St. Gothard, which is nine and a quarter miles long, having cost much less than the Mont Cenis. Finally, a tunnel seven miles in length is being bored through a spur of the Alleghanies to supply Baltimore with water. The cost of works of this description varies exceedingly, as shown in the following List:—

Tunnel.	Where.	Date.	Cost.	Length. Yards.	Cost per yard.
Kilsby . . .	Birmingham RR.	1835	£300,000	2,070	£145
Brunel's . .	Thames . . .	1824-43	620,000	560	1,100
Tower . . .	Thames . . .	1869	30,000	600	50
Mont Cenis .	Alps.	1857-70	2,600,000	13,000	200
St. Gothard .	Alps.	1872-80	1,998,000	16,295	122
Baltimore .	Alleghanies . .	1879	...	10,800	...
Birkenhead .	Mersey	1880	500,000	1,500	300
Bristol . .	Severn	1880	...	500	...

The Mersey tunnel is not yet completed; the estimate is to include also a double line of railway from Birkenhead to Liverpool. The Severn tunnel has been unfortunate, the water having broken in, which will magnify the ex-

penditure. Preliminary works have been successfully carried out for the proposed submarine tunnel from Calais to Dover; in 1877 a shaft was sunk at Sangatte, 335 feet below the sea-level, the result affording basis for an estimate of £4,800,000 as the total cost, the tunnel to be completed in six years after it may be commenced.

Bridges.—The nineteenth century has seen more bridges[1] built than mankind erected from the Christian era down to 1800. In order to understand the grandeur of our modern bridges, it is necessary to compare them with the finest works of preceding generations.

BEFORE THE NINETEENTH CENTURY.

Bridge of	Over the	Date.	Length.
Ratisbon . .	Danube	1135	994 feet
St. Esprit . .	Rhone	1285	2690 „
Prague. . .	Moldau	1650	1706 „
Schaffhausen .	Rhine	1758	364 „
Neuilly . .	Seine	1768	740 „

Suspension bridges, made of iron chains, were used in China for many centuries. Ogilvy saw one over the Junnan, in 1669, which is shown by the records to have been put up by the Emperor Ming, contemporary of Tiberius Cæsar. Nevertheless iron bridges were not tried in Europe until the last quarter of the eighteenth century. The first was that of Coalbrookdale, over the Severn, erected by Mr. Darby in 1779.

The second was built by Thomas Paine for the Susquehannah, but sold by him to Mr. Wilson, who placed it over the Wear, at Sunderland. The progress of iron bridges is shown in the following Table :—

[1] In twenty years, ending 1820, the authorities in Scotland erected no fewer than 1200 bridges.

Iron Bridges.

Name.	Over	Date.	Builder.	Length.	Iron.	Cost.
Coalbrookdale	Severn	1779	Darby	100 feet	378 tons	...
Sunderland	Wear	1796	Wilson	236 „	260 „	£27,000
Southwark	Thames	1819	Rennie	800 „	5,780 „	800,000
Berwick	Tweed	1820	Brown	449 „	160 „	5,000
Menai	Menai	1825	Telford	579 „	2,187 „	120,000
Freyburg	Sarine	1834	Challey	870 „	...	24,000
Newcastle	Tyne	1849	Stephenson	900 „	5,050 „	243,000
Britannia	Menai	1850	Stephenson	1,511 „	9,600 „	602,000
Niagara	Niagara	1855	Roebling	850 „	400 „	83,000
Victoria	St. Lawrence	1859	Stephenson	7,200 „	8,230 „	...
Pesth-Buda	Danube	1860	...	1,900 „	7,000 „	...
Freyburg	Sarine	1862	...	1,095 „	3,100 „	100,000
Charing Cross	Thames	....	...	1,365 „	...	180,000
Cincinnati	Ohio	1867	Roebling	2,252 „	...	...
Clifton	Niagara	1868	...	1,270 „	...	40,000
St. Louis	Mississippi	1874	Eads	2,200 „	4,200 „	400,000
Wuzerabad	Punjaub	1875	...	9,300 „	...	650,000
Oporto	Douro	1877	Eiffel	1,160 „	1,600 „	...
Empress	Sutlej	1878	...	6,000 „	6,650 „	550,000
Brooklyn	East River	1880	Roebling	10,500 „	...	900,000

The last-mentioned is not yet finished, and it is surmised the ultimate cost may be nearly two millions sterling: the principal span will far exceed any yet attempted, as shown thus:—

	Principal span.	Height above water.
Freyburg . . .	808 feet	167 feet
Menai	579 „	102 „
Annecy	636 „	656 „
Bath	703 „	257 „
Niagara . . .	1,190 „	190 „
Oporto . . .	525 „	201 „
Brooklyn . . .	1,620 „	210 „

The cheapest suspension bridge on record is that of Galashiels, erected by Captain Brown in 1816, with a length of 112 feet, the total cost not exceeding £40 sterling. A similar bridge at Peebles cost £160, with a length of 110 feet, being available only for foot-passengers. The average cost of iron bridges, such as for railways, appears to range from £100 to £200 per foot.

Harbours and Docks.—At the beginning of the century this branch of engineering was in its infancy. Jessop built the first London docks in 1802, with an area of 68 acres; new ones being opened from time to time until the present docks sum up a total of 690 acres. Liverpool comes next to London in this respect, having 425 acres of docks, including those of Birkenhead. The Clyde dock-walls have cost the citizens of Glasgow no less than £7,500,000 sterling; while the ports of Hull, Bristol, and Southampton have likewise expended large sums for such purposes. Rennie's great work of the Plymouth breakwater is one of the *chefs d'œuvre* of marine construction; length 5,300 feet, cost £1,550,000. It was begun in 1812, finished in 1841, and took the same quantity of stone as would have sufficed for the pyramid of Cheops, say 3,750,000 tons. The harbour and docks of Cherbourg, completed by Napoleon

III. in 1857, took seventy-four years in building, and cost £3,600,000 sterling. Lighthouses have also formed a notable feature in the engineering works of the present century. The number built since 1840 has been 1536, bringing up the total now in the world to 2801 (see page 54), which is more than double the number that existed forty years ago.

Canals.—The noblest work of this kind is the Imperial Canal of China, 1250 miles long, completed in the thirteenth century after 600 years of labour. Next in dignity, and surpassing all in commercial importance, is the Suez Canal, before mentioned, which admits vessels of 400 feet keel and 25 feet draught. The traffic averages 8000 tons daily, and the annual profits are £500,000, equal to 3 per cent on the outlay. Two works of similar magnitude are now being undertaken, the surveys being considered highly satisfactory, and the commercial advantages in both cases of the greatest importance.

I. The Susa Canal from the Mediterranean, to flood the desert of Sahara, making Timbuctoo a seaport, and opening up the commerce of interior Africa. A rival project proposed to make the canal from the Atlantic, below Mogador.

II. The Panama Canal, on Captain Wyse's plan, 46 miles across to the Pacific, without any locks, but with a tunnel 4 miles long and 260 feet high. The estimated cost is £25,500,000 sterling, but even supposing the highest estimate, say £34,000,000, the traffic receipts, allowing the same working expenses as at Suez, would give 5 per cent annual profits. This is supposing a traffic of 4,500,000 tons, paying 12s. per ton. Baron Lesseps promises to carry out the work in eight years, the Government of New Grenada engaging to cede him 1,250,000 acres of land to help the undertaking.

The canals of the world, as a rule, cannot compete in

point of utility with railways, but are nevertheless valuable auxiliaries to internal trade. The following Table of canals and navigable rivers shows the whole internal navigation of Europe :—

	Canals.	Navigable rivers.	Total.
Russia . . .	865 miles	18,935	19,800 miles
Germany . . .	1320 „	15,670	16,990 „
France . . .	2300 „	5,200	7,500 „
United Kingdom .	3600 „	900	4,500 „
Italy . . .	300 „	1,575	1,875 „
Holland . . .	900 „	300	1,200 „
Belgium . . .	530 „	476	1,006 „
Austria . . .	413 „	2,800	3,213 „
Spain . . .	270 „	750	1,020 „
Europe. . .	10,498 „	46,606	57,104 „

In France the average cost of canals was £7200 per mile, or two-thirds that of the English. The most arduous in the United Kingdom was the Caledonian, commonly called "Neptune's Staircase," which has 28 locks, attaining an elevation of 90 feet over sea-level: the cost was £19,000 per mile. The United States have made 3200 miles of canals at an average outlay of £6800 sterling.[1] At present the Russian engineer Daniloff has almost completed a canal between the Black Sea and the Caspian, by order of the Czar. The internal navigation of Brazil is stupendous, the Amazon steamers having an itinerary of 22,000 miles, namely 2406 miles on the Amazon, from Parà to Yurimanguas, and 19,800 miles on the Tocantins, Araguay, Madeira, Tapajos, Negro, Javary, and other affluents. The River Plate, including its tributaries, Paranà, Uruguay, etc., is navigable for 3600 miles. China has an extensive water-system, comprising more than 400 canals.

[1] California is constructing 2000 miles of unnavigable canals, to irrigate 10 million acres of land for tillage.

Telegraphs.—In 1837 Messrs. Cook and Wheatstone took out a patent for electric telegraphic communication, being an improvement on Mr. Ronald's method tried at Hammersmith in 1816. It was first used on the Great Western Railway in 1839, but even in 1848 there were 1700 miles of railway that refused to adopt it. At that time it was considered wonderful that the Queen's speech of 700 words was transmitted in 65 minutes from London to Liverpool. The first cable was laid between Dover and Calais in 1850; and at present there are 330 submarine cables, having a length of 97,600 miles. The mileage of land-wires in the world is as follows:—

	Miles.	Messages.	Per mile.	Per 100 inhabitants.
Europe . .	218,450	78 millions	350 messages	75 messages
America .	140,550	24 „	170 „	32 „
Asia . .	22,400	2 „	90 „	½ „
Africa . .	14,050	1 „	70 „	5 „
Australia .	25,700	4 „	160 „	150 „
	421,150	109 „	260 „	9 „

If to the above be added 97,568 miles of submarine cables, we arrive at a total of 518,700 miles, viz.—

	Miles.	Cost.	Per mile.
Land wires . .	421,150	£34,000,000	£80
Ocean cables . .	97,568	26,000,000	270
	518,718	£60,000,000	£115

Last year (1879) there were laid new cables to a length of 11,407 miles, employing twenty-seven large steamships. Some of these cables have to be made of extra thickness to resist the sawfish, which, for example, cut the Brazilian cable on five occasions near the mouth of the Amazon. The weight of a cable varies from one to twelve tons per

mile. In the following Table are shown the dates of the most remarkable existing cables :—

	Date.	Length.
Dover and Calais	1850	25 miles.
Holyhead and Dublin . . .	1852	65 „
Ireland and Newfoundland . .	1866	1896 „
France and West Indies . .	1869	2584 „
Red Sea, India, and Malacca .	1870	5086 „
Singapore, China, and Australia .	1871	4980 „
Lisbon and South America . .	1874	6840 „

In order to compare the traffic of all nations, one with another, it is necessary to suppose only the land-lines, viz.—

	Miles.	Messages.	Per mile.	Per 100 inhab.
United Kingdom .	25,000	26 millions.	1040	77
France . . .	35,450	8½ „	240	24
Russia . . .	31,450	4½ „	140	5
Austria . . .	29,250	5½ „	190	16
Germany . . .	28,100	12 „	430	30
Turkey . . .	17,950	1¼ „	70	10
Italy . . .	14,800	5½ „	360	20
Scandinavia . .	11,700	3 „	260	37
Spain and Portugal .	10,800	2 „	180	10
Low Countries . .	5,450	5½ „	1000	62
Switzerland . .	4,300	3 „	700	130
Greece and Roumania	4,200	1¼ „	300	30
Europe . . .	218,450	78 „	350	75
United States . .	110,000	21 „	190	50
Spanish America .	24,550	2 „	80	5
India	17,850	1 „	60	½
British Colonies . .	35,100	5 „	150	60
Egypt, Japan, etc. .	17,200	2 „	120	3
	421,150	109 „	260	9

If all nations established an uniform shilling tariff the present traffic would produce £5,500,000 per annum, from which, deducting one-half for working-expenses, the result

would be equal to 4½ per cent on the cost of all the existing land-lines and cables.

Miscellaneous.—Among minor works of engineering may be noted the removal of the Pelham Hotel, Boston, a stone edifice of ninety-six feet in height, and weighing 10,000 tons, which was conveyed to a distance of fourteen feet in seventy hours. In like manner, Cabot's chimney, Maine, United States, standing seventy-eight feet high and weighing a hundred tons, was carried twenty feet in four hours and a half, the factory resuming its work the same afternoon. The *Builder* gives an instance of rapidity of construction in a house three storeys high, measuring eighteen by forty feet, which was put up and finished in nineteen hours and a half, being tenanted on the third day afterwards. Steam-pumps of great power are now used with great success on emergencies; those employed at Zegedin in 1879 pumped out 35 million tons of water in seventy days, say 500,000 tons daily. When the Severn tunnel was flooded, two months ago, three pumps were set to work, which raised 150,000 gallons each per hour. The Dutch Government propose to drain the Zuyder Zee by means of 10,000 horse-power steam-pumps in twenty-one months, although it is a sea of 600 square miles in area, and twelve feet in depth.

XI.—INSTRUCTION.

When the Treaty of Vienna restored peace to Europe it left the nations sunk in ignorance. With the exception of Germany and Scotland the masses of the people were unable to read, for the State taught nothing but the use of firearms. Since then we have made wonderful progress; first, the Press educated the cabinets and legislators of Europe; secondly, the legislatures undertook the enlighten-

ment of the masses. The result is seen in the following Table of adults able to read and write :—

	1830.	1878.
Scotland . . .	80 per cent.	85 per cent.
Germany . .	79 „	88 „
England . . .	56 „	77 „
France . . .	36 „	70 „
Ireland . . .	48 „	66 „
Italy . . .	25 „	45 „
Average . .	53 „	70 „

France has made the greatest relative progress, but still she has only arrived at the average standard, whereas England is now 10 per cent above the average.

The spread of popular instruction has not only raised the level of mankind, but promoted a better equality among nations. If we suppose the intellectual power to consist of the number of millions who can read and write, we find the aliquot parts of the brain of the world to be for 1830 and 1878 as follows (excluding Asia) :—

	Able to write. 1830.	Aliquot parts.	Able to write. 1878.	Aliquot parts.
Germany . .	12,100,000	24	21,200,000	18
United Kingdom	8,300,000	17	16,150,000	14
France . .	6,450,000	13	15,400,000	13
United States .	5,500,000	11	21,700,000	18
Austria . .	4,700,000	9	11,800,000	10
Scandinavia .	3,120,000	6	4,450,000	4
Italy . .	3,050,000	6	7,850,000	7
Spain and Portugal	2,350,000	5	4,850,000	4
Low Countries .	2,850,000	5	4,950,000	4
Switzerland .	1,080,000	2	1,550,000	1
Russia . .	770,000	2	3,540,000	3
British Colonies	320,000		4,760,000	4
	50,590,000	100	118,200,000	100

The above Table shows that there are three nations equal in brain-power—viz. the British Empire, Germany, and United States—each standing for 18 per cent of the total.

It is also worth observing that Australia and Canada have now as large a reading population as the United States could boast fifty years ago.

Another mode of ascertaining the relative degree of instruction is to compare the number of school-children with population.

	1830.	1878.
Germany	17 per cent.	17 per cent.
United States	15 „	19 „
Scandinavia	14 „	14 „
Switzerland	13 „	15 „
Low Countries	12 „	16 „
United Kingdom	9 „	15 „
France	7 „	13 „
British Colonies	6 „	21 „
Austria	5 „	9 „
Spain	4 „	8 „
Italy	3 „	7 „
Spanish America	2 „	4 „
Turkey	2 „	2 „
Russia	...	2 „

The expenditure for schools averages one shilling per inhabitant in Germany, three in the United Kingdom, and between endowments of land and other sources in the United States the school income is in that country almost eight shillings per inhabitant. That the money spent upon schools is saved from what would otherwise be prison expenditure, or for the support of paupers, is shown by the results obtained in England, as follows:—

	1850.	1877.	Rise or fall.
School Children to pop.	12 p. c.	17 p. c.	Rise of 42 p. c.
Convicts per million inhab.	1150 „	488 „	Fall of 56 „
Paupers per thousand	53 „	33 „	„ 39 „

So generally is this view now accepted on the Continent, that the votes of money for educational purposes have doubled since 1870. The total school expenditure in Europe, America, and Australia makes up (including local rates) a sum of £37,000,000, or £1 per head for the number of children actually receiving instruction.

THE PRESS.

Newspapers of the Waterloo epoch were hardly as well got up as the daily sheets now printed at Wagga-Wagga or the Sandwich Islands. Between stamp-duties in England and censorship in other countries the Press was gagged so effectually as to prevent intellectual development. So late as 1840 our American cousins boasted that the circulation of their 830 journals reached two million copies weekly, and surpassed that of all Europe with its 233 million inhabitants. In that year the press of London and Paris stood thus:—

	Daily papers.	Circulation.
London	9	45,000
Paris	27	61,000

The repeal of the paper duties in Great Britain in 1861, in the words of an English writer, "threw open the floodgates of knowledge to the world." The annual circulation of newspapers in the United Kingdom multiplied fourteenfold in thirty-three years, viz.—

	1831.	1864.
England	32 millions.	482 millions.
Ireland	4¼ „	36 „
Scotland	2¼ „	28 „
United Kingdom	38½ „	546 „

In the subjoined Table are shown the date of the introduction of newspapers into each country, the number exist-

ing in 1840 and at present, and the tons of printing paper consumed per annum:—

	First paper.	No. in 1840.	No. in 1880.	Tons paper.
United Kingdom	1622	493	1,836	168,000
United States	1704	830	6,432	525,000
France	1605	776	1,280	134,000
Germany	1524	305	2,350	244,000
Austria	1550	132	876	92,000
Russia	1714	204	318	72,000
Low Countries	1757	75	376	40,000
Scandinavia	1644	104	120	30,000
Italy	1562	210	1,124	38,000
Spain and Portugal	1704	92	150	10,000
Switzerland	...	54	230	17,000
Spanish America	1728	98	850	20,000
Canada	1765	88	340	20,000
West Indies	1731	37	50	5,000
Australia	1805	43	220	15,000
Turkey	1797	8	72	
Persia	1838	2	...	
India	1731	63	644	
China	880	4	...	30,000
Africa	1824	14	40	
Sandwich Islands	1835	1	6	
Japan	...	...	34	
		3,633	17,348	1,470,000

The ordinary newspaper circulation is about 4 million copies in the United States, 2 million in the United Kingdom, and 6 million in the rest of the world, say 12 million copies daily; the circulation has doubled since the introduction of telegrams.[1] The book trade has not grown in the same manner, but progresses faster than population, doubling in 40 years, viz.—

[1] Carrier-pigeons competed for a time with Reuter's telegraphic service; even so late as 1877 the *Nationale* of Paris had 10 pigeons which carried despatches between Versailles and Paris in 15 to 20 minutes.

	Annual average of new works. 1828 to 1832.	1866 to 1869.
Great Britain	1,060	3,220
United States	1,013	2,165
Germany	5,530	9,095
France	4,640	7,350
	12,243	21,830

As a consequence of the spread of the English language the exportation of books from Great Britain has increased ten-fold in less than half a century, viz.—

	Export of books.
1832	£93,000
1875	915,000

It is remarkable that while many old languages are dying out, the Press is every year adding new ones to its list of conquests. There is no newspaper published in Irish,[1] and even the Basque journal, *Irurac Bat*, has been suspended; meantime the *Wananga* has appeared in the Maori language of New Zealand, the *Osoka-Nippo* issues 10,000 copies daily in Japanese, and a paper in the Cherokee tongue circulates widely among the Indians of the North American backwoods. New books are also appearing in strange languages, the Life of Washington (in 42 quarto volumes) having been recently published in Japanese at Jeddo, and Mr. Secretary Ho's translation of Shakspeare and of Blackstone's Commentaries into Chinese being announced by an eminent publisher of Pekin.

PUBLIC LIBRARIES AND ASSOCIATIONS.

Free libraries were so few at the beginning of the nineteenth century that they were practically of no value to the

[1] The Scottish Gaelic has, nevertheless, found a home in Canada, where a paper is published in that tongue.

people, but limited to the use of students or men of letters. The first complete record on this subject is dated 1848, and shows as follows :—

	Libraries.	Books.
France	107	3,975,000
United States . . .	81	955,000
Germany . . .	80	6,053,000
Italy	45	2,274,000
Austria	41	2,193,000
Great Britain . . .	28	1,542,000
Spain and Portugal .	24	963,000
Turkey	72	150,000
Scandinavia . . .	13	968,000
Switzerland . . .	13	465,000
Russia	12	851,000
Low Countries . .	19	728,000
	536	21,067,000

In the last thirty years these institutions have doubled; we find, for example, that the United Kingdom has now 153 free libraries (not including the British Museum), with an aggregate of 2,500,000 volumes and more than 7 million readers per annum. Italy has 210 libraries with 4,250,000 books, besides her numerous galleries of the fine arts. France has 350 libraries, with 7 million volumes. Switzerland 1654 libraries, while Austria and Germany also count these institutions by hundreds. In point of magnitude the collections of the British Museum and the Bibliothèque Nationale of Paris are unrivalled, the former boasting 30 miles, the latter 18 miles of book-shelves. The United States, by including the libraries attached to public schools, make up 45,500,000 volumes in 164,815 libraries. In the various British Colonies the institutions of this kind are numerous and well maintained, the library of Melbourne being worthy of any European capital. The Emperor of China possesses a great collection of works, over 400,000

volumes, which is, however, rather a private than a public library. It is worthy of remark how much has been done by private munificence both in England and the United States in this way; the Astor library, of New York, for instance, is the gift of a German settler who landed in America a penniless youth, and the Brown library at Liverpool, in like manner, attests the gratitude of an industrious Irishman who made his fortune in that town.

Learned societies, which have the same effect in promoting knowledge that joint-stock companies have in the great enterprises of the age, are growing in numbers and influence all over the world. In 1830 there were but 47 such associations in the United Kingdom, while a recent statement gives 118 with a total of 30,000 members and an income of £100,000 per annum. In France they are still more numerous, Paris counting 43, and the Departments 135 societies. If complete statistics could be obtained on this head, it would doubtless appear that the learned societies of all countries make up an army of 100,000 men, who devote at least a portion of their labours to the delight, instruction, or material improvement of the human family.

POST OFFICE.

The intellectual and commercial activity of a people is easily measured by the postal returns, which also indicate the advancement in a given term of years. Subjoined is a Table showing the number of letters to each inhabitant, and the progress of ten years :—

	1867.	1877.
United Kingdom . .	27	35
Switzerland . . .	24	30
United States . . .	15	19
Australia	13	18

	1867.	1877.
Germany	9	15
Low Countries	9	14
France	10	10
Scandinavia	7	9
Austria-Hungary	6	8
Canada	6	8
Spain and Portugal	4	5
Italy	3	4
Spanish America	1½	2
Greece	1½	2
Russia	¾	1
Japan	...	1

Postal development has had two great epochs, the first when Rowland Hill introduced the penny postage in 1840, the second when the Berne Convention established a reduced international tariff. Summing up the postal and telegraph returns of the world, we find the aliquot parts thus:—

	Postal.	Telegraphic.	Total.
United Kingdom	29	21	25
United States	19	21	20
Germany	14	12	13
France	8	8	8
Other Countries	30	38	34
	100	100	100

If letters and newspapers be taken as a measure of enlightenment, it will be found that Great Britain and the United States stand for half the world, the daily circulation being as follows:—

	Letters.	Newspapers.	Total.
United Kingdom	3,000,000	2,000,000	5,000,000
United States	2,000,000	4,000,000	6,000,000
Other Countries	5,000,000	6,000,000	11,000,000
	10,000,000	12,000,000	22,000,000

XII.—CHARITIES, PAUPERISM, CRIME.

It is not surprising that with so great an increase of public wealth and instruction the charities of mankind have multiplied during the present century in an unprecedented degree. If England can be taken as a guide, we have evidence that hospitals, asylums, and charitable bequests have grown not only much faster than population, but far beyond even the ratio of public wealth. It may therefore be inferred that the wants and sufferings of the poor are better attended to than before.

The returns of pauperism in the various countries of Europe are as follows:—

	No. of persons relieved.	Ratio to population.	Poor-rates per inhabitant.
United Kingdom . . .	1,037,000	33 per 1000	72 pence.
Italy	1,365,000	48 ,,	24 ,,
Prussia	1,310,000	50 ,,	42 ,,
Austria	1,220,000	35 ,,	24 ,,
France	1,151,000	32 ,,	18 ,,
Low Countries	1,010,000	105 ,,	31 ,,
Spain and Portugal . .	596,000	30 ,,	13 ,,
Scandinavia	301,000	38 ,,	29 ,,
Switzerland	140,000	54 ,,	88 ,,
	8,130,000	41 ,,	31 ,,

The number of persons relieved indicates the attention paid to the wants of the poor, not the degree of actual pauperism. Spain, for example, swarms with mendicants, yet the number in the above Table would almost make it appear to have fewer paupers than France or Sweden, where mendicancy is unknown. The efficiency of relief has also for effect to heighten the poor-rate, which falls 3 times as

heavy in England as in Italy, because we expend £7 per head annually on our poor, while the relief in Italy seldom amounts to one-fourth that sum.

Convents and charitable societies, no doubt, contribute in a great measure in Southern Europe to aid the houseless and hungry poor, but not so effectually as our English workhouse system. We still meet "mendicants" who solicit alms with a blunderbuss in the Sierra Morena, or in Calabria, just as in the days of Gil Blas; for brigandage prevails where the State does not suitably legislate for the poor. The large cities of the United States have homes for the destitute, but chronic misery can hardly be said to exist. Spanish America is equally free from such a burthen, except that a few licensed beggars go round for alms every Saturday, usually on horseback. In the English Colonies poverty is practically unknown.

Charitable institutions, especially hospitals, render an incalculable amount of good to society, and flourish in all countries. The largest hospital in the world is the Misericordia at Rio Janeiro, which admitted last year 15,200 patients. The second appears to be the Hôtel Dieu at Paris, with 10,000 patients, the largest of our London hospitals, St. Bartholomew's or Guy's, having only 5500 yearly.

The rate of mortality in small hospitals is much lower than in large ones (see page 170), which partly explains why only 7½ per cent of persons admitted die in British hospitals, and 13 per cent on the Continent. The statistics of Great Britain and France [1] compare as follows :—

[1] France has altogether 1481 hospitals and asylums, with 162,000 beds, the average cost being £26 per bed per annum.

	Great Britain.	France.
No. of Hospitals . .	483	376
No. of beds . . .	14,300	40,200
Admissions . . .	131,000	410,000
Physicians . . .	715	1,820.
Death-rate . . .	7½ p. c.	8½ p. c.

Hygienic science has succeeded in reducing the death-rate to a minimum; it was 8½ per cent in Great Britain from 1800 to 1834, or 1 per cent more than in the years 1870-1876. It is at present only 6½ per cent in hospitals with less than 100 beds, but 8 per cent in those over 200. The ordinary stay of each patient in this country is thirty days, and costs 55s.; the stay in France averages thirty-five days.

The number of poor being less in France than in England, owing chiefly to the provident habits of the French people, the demands on public and private generosity are much less than in Great Britain :—

	Great Britain.	France.
Poor-rates . . .	£9,425,000	£1,550,000
Donations, bequests, etc. .	9,630,000	2,680,000
	£19,055,000	£4,230,000

The greater generosity of the wealthy classes in Great Britain and France than forty years ago is shown by the charitable bequests compared with the value of property subject to legacy and to succession duties, viz.—

	1830 to 1840.		1872 to 1876.	
	Bequests.	Ratio to Property.	Bequests.	Ratio to Property.
United Kingdom	£165,000	45s. p. £1000	£630,000	84s. p. £1000
France . .	152,000	42s. ,,	1,120,000	121s. ,,

Charity has grown twice as fast as public wealth in England, and three times in France. Apart from the enormous sums annually contributed during life by the

affluent, there is a self-imposed death-bed contribution which amounts to one penny in the £ in England, and to 1½ pence in France; not that the French are more generous than we are, since our annual subscriptions to charity are double the amount that they are in France.

The charitable bequests of Great Britain, France, and Italy, with reference to national wealth and population, compare as follows :—

	Great Britain.	France.	Italy.
Annual bequests .	£630,000	£1,120,000	£124,000
Ratio per inhabitant	5 pence	8 pence	1¼ pence
Do. to wealth . .	£72 per million £	£153	£77

Thus it appears that the sentiment of charity is pretty equal among nations, and limited only by the means of each people, or the proportion of poor and afflicted.

Defects.—In the crowded cities of Europe, or among ill-fed populations, there is a much greater number of blind, deaf, and dumb, insane, etc., than in the United States, British Colonies, or other new countries.

In the following Table the country most afflicted seems Ireland, the reason of which appears to be that emigration took away only the strong and healthy, the number of afflicted being therefore the ratio for double the actual population :—

	Blind.	Deaf and Dumb.	Insane.	Ratio of afflicted to population.
United States .	1 in 2720 inhab.	1 in 2094 inhab.	1 in 623 inhab.	2½ per cent.
England . .	1 „ 1055 „	1 „ 1754 „	1 „ 368 „	4¼ „
Ireland . .	1 „ 894 „	1 „ 1380 „	1 „ 316 „	5 „
Scotland . .	1 „ 1096 „	1 „ 1340 „	1 „ 416 „	4 „
France . .	1 „ 1210 „	1 „ 1212 „	1 „ 410 „	4⅛ „
Germany . .	1 „ 1186 „	1 „ 1364 „	1 „ 666 „	3⅛ „
Norway . .	1 „ 570 „	1 „ 1090 „	1 „ 334 „	5⅜ „
Low Countries .	1 „ 2015 „	1 „ 2880 „	1 „ 1100 „	1¾ „
Italy . . .	1 „ 1230 „	1 „ 1350 „	1 „ 4880 „	1¾ „
Sweden . .	1 „ 1270 „	1 „ 1040 „	1 „ 500 „	3¾ „
Austria . .	1 „ 1164 „	1 „ 973 „	1 „ 1000 „	3 „
Spain . . .	1 „ 262 „	1 „ 1510 „	1 „ 5000 „	5 „
Switzerland . .	1 „ 1045 „	1 „ 378 „	1 „ 1000 „	4½ „

The above shows that blindness is very prevalent in Spain, Norway, and Ireland, insanity in Scandinavia and the United Kingdom, and that the deaf and dumb are most numerous in Switzerland and Austria.

Insanity is in most countries on the increase, especially in France and Great Britain. Political excitement may be the cause in the former country, but in England the increase seems to arise from two sources; firstly, the better care taken of the insane, by which the death-rate of asylums has been reduced 70 per cent, and secondly, the anxiety of business, attendant on the development of trade in the last twenty years. The average returns for Great Britain and Scandinavia show insanity to be produced thus :—

Hereditary causes . . .	14 per cent
Intemperate habits . .	33 „
Various causes . . .	53 „
	100

Among the various causes are (1) hunger and poverty; (2) celibacy; (3) intermarriage of cousins; (4) sunstroke and other accidents. The first cause explains the heavy rate in Ireland; the second is established by the smaller ratio of married people; the third is proved in Wales and among the Society of Quakers; and the fourth accounts for the large ratio in the military profession. In Europe the sexes of lunatics are even; that is, 106 women to 100 men, the same as in the population; except in Ireland, where male lunatics are more numerous, and the United States, where women barely form one-third of the total. Cases of recovery average 40 per cent, being commoner among women than men, and generally in the first three months of detention. The Quaker Asylum of York shows 50 per cent cases of recovery.

44635

Suicide.—It is ascertained that one-third of suicides are the effect of insanity, and two-thirds are committed by sane persons. Suicide is most frequent in the male sex—viz. 78 males to 22 females.[1] It is in all countries almost twice as common in summer as in winter, the ratio of the seasons being as follows:—

Summer . .	31 per cent
Spring . . .	28 „
Autumn . .	22 „
Winter . .	19 „

Climate seems to have a certain influence, as the ratio of suicide rises as we go north, or declines as we go south. The annexed Table shows the rate of increase as follows:—

Suicides in 1820-40.		Suicides in 1856-75.
...	Spain	14 per million inhabitants
...	Russia	26 „ „
...	Italy	35 „ „
44	Belgium	55 „ „
38	Austria	64 „ „
61	England	67 „ „
72	Sweden and Norway	82 „ „
69	France	140 „ „
...	United States	142 „ „
79	Germany	123 „ „
136	Denmark	288 „ „

The modes of committing suicide differ in most countries, and vary some years, like fashions in dress (see Appendix).

Crime.—That public morality has risen in every country in the same degree as instruction, is fully proved by the statistics of crime. In Great Britain, for example, the annual convictions compared to population have fallen 60 per cent in the last forty years. Similar results are true in a greater or less degree of other countries; but no exact comparison can be made, owing to the alterations of

[1] In England, however, the ratio is 72 males to 28 females.

criminal procedure in the classification of crimes. There is, moreover, a difference in the nature of offences in various countries. In the north, fraud, theft, and infanticide; in the south, stabbing and highway robbery are most frequent. M. Block gives the following comparative Table of murder and stabbing in the various countries:—

United Kingdom	7½	per million inhabitants
Sweden and Norway	8	,, ,,
France	8¼	,, ,,
Germany	8	,, ,,
Belgium	11	,, ,,
Austria	16	,, ,,
Russia	32	,, ,,
Italy	57	,, ,,
Spain	88	,, ,,

There is professedly a close relationship between poverty and crime, as shown by the inspectors of prisons in Great Britain in their Report:—"The Commissioners note a remarkable correspondence between pauperism and crime, as follows:—

"Crime and pauperism.

"Fell from	1851 to 1853
Rose ,,	1854 ,, 1857
Fell ,,	1858 ,, 1860
Rose ,,	1861 ,, 1863
Fell ,,	1864 ,, 1866
Rose ,,	1867 ,, 1870
Fell ,,	1870 ,, 1872."

Dr. Mayr shows that in Germany, when the price of flour rises, there is an increase of emigration and of robberies, but no connection with the ratio of murders and assaults. The administration of justice, compared with population, is twice as costly in some countries as in others. For example, in Italy twenty pence, and in France only nine pence per inhabitant. The total expenditure for law-courts and prisons in the United Kingdom is forty pence per inhabitant, or a little more than we spend on schools.

PART II.

THE BRITISH EMPIRE.

THE British Empire is growing in population faster than any other country except the United States, and has made greater advancement in the present century than in any previous period of its history. Without taking into account our possessions in the East and West Indies, where the inhabitants are not of our race, it will be found that the United Kingdom and the Colonies comprise a population of 42½ millions, which is equal to that of Germany or the United States. The increase since 1801 has been as follows:—

	United Kingdom.	Colonies.	Total.
1801 . .	15,896,000	400,000	16,296,000
1840 . .	26,487,000	1,560,000	28,047,000
1879 . .	34,160,000	8,348,000	42,508,000

Forty years ago the Colonies formed but 5 per cent of the empire; at present they constitute one-fifth, and their population increases so rapidly, that by the close of the nineteenth century they will probably count from 15 to 20 million Englishmen—a number equal to the total strength of our empire during the wars against Buonaparte.

UNITED KINGDOM.

The Napoleon wars caused no perceptible drain on the manhood of Britain. We had, during twenty years, no less than 480,000 soldiers and sailors in the field, but the expenditure of life was small compared with that of treasure.[1] This

[1] The direct outlay was £630,000,000, but the total cost of the war £831,500,000.

is shown by two facts—First, the rate of increase of population from 1801 to 1821 was 36 per cent greater than it has been since that date. Secondly, the proportion of males to females in our population was higher in 1821 than at any subsequent census. In the interval from 1801 to 1821 the increase was 34 per cent, that is 17 per 1000 annually; whereas between 1821 and 1879 it has been 60 per cent, say 12½ per 1000 per annum. The diminished increase during the second period was due to emigration, the number of emigrants reaching 8,003,000; of which we lost 64 per cent, who preferred the United States to our own Colonies.

The proportion of females has increased as follows:—

1821	. .	102½ to 100 males	
1851	. .	103½	,, ,,
1879	. .	105½	,, ,,

This may be also an effect of emigration, and it is likely the census of 1881 will show a reaction, as the number of returning emigrants has been since 1877 almost as great as of those leaving the country. It is very remarkable that, in spite of emigration, the sexes are more evenly balanced in Ireland than in the sister-kingdoms, viz.—

Ireland	. .	952 males to 1000 females		
England	. .	949	,,	,, ,,
Scotland	. .	912	,,	,, ,,
United Kingdom	.	945	,,	,, ,,

The surplus of females in Scotland is enormous, and equalled only by Norway.

The average births and deaths for the last ten years show as follows, per annum:—

	Births.	Deaths.	Increase.
England . .	358 per 10,000 inhabitants.	220	138
Scotland . .	351 ,, ,, ,,	222	129
Ireland . .	268 ,, ,, ,,	172	96
United Kingdom	342 ,, ,, ,,	212	130

Notwithstanding the low rate of increase in Ireland, the average for the United Kingdom is far ahead of Germany, or any other country in Europe. The death-rate gives an average of forty-two years for the span of life, which is longer than in any other country except Scandinavia. There is, of course, a notable difference between the death-rate of cities and that of country districts, especially in Ireland, the returns showing as follows :—

	Cities.	Country.	General.
England . .	227 per 10,000 inhabitants.	213	220
Scotland . .	223 ,, ,, ,,	221	222
Ireland . .	262 ,, ,, ,,	155	172
United Kingdom	230 ,, ,, ,,	200	212

The official returns show that some cities had 30 or 40 per cent heavier death-rate than others, the order being as follows :—

Dublin . .	281 per 10,000 inhabitants
Belfast . .	280 ,, ,, ,,
Manchester . .	275 ,, ,, ,,
Liverpool . .	266 ,, ,, ,,
Cork . . .	261 ,, ,, ,,
Glasgow . .	252 ,, ,, ,,
Birmingham .	243 ,, ,, ,,
London . .	220 ,, ,, ,,
Edinburgh . .	211 ,, ,, ,,
Brighton . .	184 ,, ,, ,,

The last two cities are below the average mortality of the United Kingdom.

Sanitary improvements during the last thirty years have reduced the death-rate so much as to add five years to the average span of life.

1847 to 1850	deaths 23½	per 1000 ;	average life 37 years
1851 ,, 1870	,, 22½	,, ,,	,, 39 ,,
1871 ,, 1878	,, 21⅛	,, ,,	,, 41½ ,,

There is still room for much improvement, for if we

could reduce the death-rate of seven cities above cited to a level with London, it would save 10,400 lives per annum. Accidental deaths might easily be reduced in our large cities; for example, the number of persons killed by cabs is excessive in London, but still more so in Leeds and Dublin, the returns for 1872 showing as follows:—

	Per million inhab.		Per million inhab.
Birmingham	24	Liverpool	46
Sheffield	36	Manchester	53
Glasgow	42	Dublin	72
London	45	Leeds	178

Subjoined is a Table of the births, marriages, and deaths for ten years (1868-77).

	England and Wales.	Scotland.	Ireland.	Total.
Medium pop.	23,200,000	3,420,000	5,405,000	32,025,000
Births	830,000 p. an.	120,000 p. an.	145,000	1,095,000
Deaths	510,000 ,,	76,000 ,,	93,000	679,000
Increase	320,000 ,,	44,000 ,,	52,000	416,000
Emigration	54,000 ,,	15,300 ,,	64,200	133,500
Net increase	266,000 ,,	28,700 ,,	decr. 12,200	282,500
Marriages	192,000 ,,	25,000 ,,	26,500	243,500

If deduction be made for emigration, it will be seen that 93 per cent of the annual increase corresponds to England and Wales.

The marriage-rate and proportion of children to each marriage in the last ten years were as follows:—

	Marriages.	Births to marriages.
England	165 per 10,000 inhabitants	430 to 100
Scotland	146 ,, ,, ,,	480 ,,
Ireland	98 ,, ,, ,,	548 ,,
United Kingdom	152 ,, ,, ,,	450 ,,

The marriage-rate of the United Kingdom is lower than the European average;[1] which perhaps arises from the fact

[1] The census of 1871 showed 1,246,000 unmarried women between the ages of 15 and 21 years.

that in Ireland emigration has drained off the bulk of young people of the marrying age. Meantime the marriages in Ireland are more prolific than in any other country of the world, being in this respect 25 per cent ahead of England.

The proportion of 105 male births to 100 female is the same in the United Kingdom as the general average of Europe. The rate of infant mortality (*i.e.* under five years) is low in comparison with many other countries, but varies according to circumstances.

	Mortality.
Families of fortune . . .	10 per cent of births
Country districts . .	18 ,, ,, ,,
Cities	36 ,, ,, ,,
England	26 ,, ,, ,,
Ireland	17 ,, ,, ,,
Scotland	20 ,, ,, ,,

Illegitimacy has declined very notably in the last forty years, and is now little more than half the average that prevails in Europe. The three kingdoms are by no means equal, the ratio in every 1000 births being thus:—

	Legitimate.	Illegitimate.	
England	955	45	1000
Scotland	910	90	1000
Ireland	977	23	1000
United Kingdom . .	950	50	1000

The highest rate of illegitimacy in England falls to the county of Norfolk, namely 85 per 1000; the highest in Scotland to Wigtownshire, 182 per 1000.

Deaths in childbed averaged for 30 years 1 in 200, but in 1875 they rose to 1 in 170 births. Notwithstanding this toll of mortality paid by the female sex, we find that last year there were sixty-five women and only twenty-two men who had attained the age of 100 years.

The following Table shows the ratio of population in the three kingdoms in 1801 and at present:—

	1801.	1879.
England and Wales . . .	56	74
Ireland	34	16
Scotland	10	10
	100	100

The preponderance of England is every day increasing, not only in population, but also in wealth and all the other elements of national importance.

The census of 1871 shows a surplus of full-grown inhabitants in England, and a deficit in Ireland, taking 100 as the par that corresponds to each age and class, the principal features being as follows:—

	England.	Scotland.	Ireland.	U. Kingdom.
Infants under 5 years .	101½	103	88	100
Boys and girls . . .	99	102	102	100
Men under 40 . . .	103	95½	92	100
Women do. . . .	102	101	93	100
Men 40 to 60 . . .	101	92	99	100
Women do. . . .	100	100	100	100
Men over 60 . . .	89	89	136	100
Women do. . . .	93	110	130	100

As soon as the inhabitants of Scotland and Ireland reach twenty years of age England attracts a large number, and hence the old people in the sister-kingdoms form a greater proportion than if the population were allowed to follow its natural course.

There is no country in Europe where so few of the population are idle as in the United Kingdom; although our possessions and our commercial interests in every part of the globe call for numerous garrisons and naval stations we have the smallest proportion of men engaged in our military forces, of all European nations. The total army and navy strength does not exceed 233,000 men, or seven per 1000 of our population.

WEALTH OF THE UNITED KINGDOM.

The income-tax returns for 1875 show that the earnings of the British nation have doubled in twenty years, and quadrupled since the battle of Waterloo.

	Income.	Per inhabitant.
1815 . .	£137,000,000	£7
1855 . .	308,000,000	11
1875 . .	571,000,000	17

This is, however, only the income subject to taxation, the total earnings of the United Kingdom being nearly double. As the estimates of Leroy Beaulieu and others coincide in this regard, and are confirmed by every test that can be adopted, it may be safely laid down that the annual income is £1,120,000,000 sterling, which total seems to be composed of the following items:—

Agricultural	£265,000,000
Manufactures and trade . .	680,000,000
Minerals	66,000,000
Interest on foreign investments	68,000,000
Carrying trade (54,000,000 tons)	40,000,000
	£1,120,000,000

This income far exceeds that of any other country in Europe, and the estimates of public wealth by the most experienced economists show that the capital of the United Kingdom has doubled in forty years, the average accumulation since 1840 being £100,000,000 sterling per annum.[1]

	Estimate.	Wealth of United Kingdom.
1800 . .	Beck and Pulteney	£1,800,000,000
1840 . .	Porter	4,000,000,000
1860 . .	Levi	6,000,000,000
1877 . .	Giffen	8,840,000,000

[1] Since 1875 the accumulation may be put down as low as £60,000,000 per annum. The average of new companies formed in

This prodigious increase is confirmed by official returns of various departments. Take, for example, the statement of property subject to legacy-duty in the United Kingdom since 1811 :—

1811 to 1820 . . .	£25,490,000 per annum
1841 to 1850 . . .	43,800,000 ,, ,,
1861 to 1870 . . .	73,600,000 ,, ,,
1876 . . .	116,100,000 ,, ,,

Although the development of commerce is but an indirect proof of wealth, it may be lawful to quote it in further confirmation of the estimates of Mr. Giffen and his predecessors. The trade of the United Kingdom showed—

1811 to 1820 . .	average £61,000,000 per annum
1841 to 1860 . .	,, 252,000,000 ,, ,,
1871 to 1879 . .	,, 640,000,000 ,, ,,

There is still another gauge of prosperity which bears out the Tables already given, viz. the Insurance returns.

1815 to 1825 . . .	average £410,000,000
1835 to 1845 . . .	,, 606,000,000
1865 to 1875 . . .	,, 1,778,000,000

Finally, the deposits in the various banks have multiplied still faster than the other signs of wealth above mentioned. The estimates of Newmarch, Dun, and other authorities, show as follows :—

	Deposits.
1844	£70,000,000
1866	350,000,000
1876	800,000,000

The above five Tables taken together would seem to indicate that the earnings and expenditure of the British nation averaged as follows :—

the United Kingdom in the last three years showed £35,000,000 per annum capital paid up, which probably represented at least half the national increase of wealth.

	Earnings.	Expenditure.	Accumulation.
1820 to 1840	£475,000,000	£435,000,000	£40,000,000 per annum
1841 to 1860	620,000,000	540,000,000	80,000,000 „ „
1861 to 1880	1,030,000,000	910,000,000	120,000,000 „ „

Taking for bases the income-tax returns and Professor Caird's agricultural estimates, we find the earnings of the three kingdoms are as follows:—

	Income.	Per Inhab.
England and Wales . .	£918,000,000	£37
Ireland	94,000,000	18
Scotland	108,000,000	30
	£1,120,000,000	£33

The ratio for England is higher than that of any other country in the world. Scotland is second only to the United States. Ireland is on a par with Germany.

In the last ten years wealth has grown three times faster than population.[1] In 1868 Mr. Dudley Baxter estimated the national earnings at £819,000,000, and if that estimate be deemed correct, the income of the British people will now be £1,065,000,000, or 5 per cent less than Leroy Beaulieu's and the above calculations. The fact that the public wealth has grown 30 per cent in ten years is proved by the income-tax returns, and confirmed by the statement of property subject to legacy and succession duties, viz.—

	1868.	1877.
Subject to legacy duty . .	£88,000,000	£116,000,000
„ succession duty .	35,000,000	43,000,000
	£123,000,000	£159,000,000

On the basis, therefore, of Dudley Baxter's estimates, the wealth of the nation has increased in each class as follows:—

[1] Since 1868 the increase of the United Kingdom has been—

In population	10 per cent
„ commerce	20 „
„ income assessments . .	30 „

Annual Income.	1868. Persons.	1868. Sum.	1879. Persons.	1879. Sum.
Over £5000	8,500	£126,000,000	9,350	£164,000,000
£1000 to £5000	48,800	83,500,000	53,650	109,000,000
£300 to £1000	178,300	88,000,000	197,000	114,000,000
£100 to £300	1,026,400	111,000,000	1,128,000	144,000,000
Under £100	1,497,000	81,500,000	1,647,000	106,000,000
Working Class	10,961,000	329,000,000	12,057,000	428,000,000
	13,720,000	£819,000,000	15,092,000	£1,065,000,000

The relative increase of wealth since 1860 has been greatest in Scotland, as shown by the income-tax returns, viz.—

	1860.		1876.	
		Per inhab.		Per inhab.
England and Wales . .	£282,000,000	£14 per ann.	£490,000,000	£20 per ann.
Scotland .	30,000,000	10 ,,	54,000,000	15 ,,
Ireland .	23,000,000	4 ,,	35,000,000	7 ,,
	£335,000,000	£12 per ann.	£579,000,000	£18 per ann.

The above shows that the wealth of England increased 75, that of Scotland 80, and that of Ireland 52, per cent.

BANKS AND COMPANIES.

Banking has perhaps been as efficient an agent as steam-power in advancing the trade and prosperity of Britain. The greatest development has been in the last quarter of a century. The returns of capital and deposits for 1874, compared with those of 1850, showed as follows:—

	1850.	1874.	Increase.
Bank of England	£36,000,000	£70,000,000	95 per cent.
London Banks	74,000,000	302,000,000	308 ,, ,,
Provincial England	97,000,000	256,000,000	159 ,, ,,
Scotland . .	36,000,000	106,000,000	195 ,, ,,
Ireland . . .	17,000,000	48,000,000	183 ,, ,,
	£260,000,000	£782,000,000	208 per cent.

Since 1874 there has been a decline in the joint-stock banks, and an increase in the Bank of England. The figures published in October 1879, as compared with 1874, show as follows: for aggregate of capital, reserve, and deposits, including also the Post-Office Savings Banks.

	1874.	1879.
Bank of England . .	£70,000,000	£80,000,000
Other Banks	712,000,000	632,000,000
	£782,000,000	£712,000,000

This shows a decline of 11 per cent since 1874 in the joint-stock banks, which is partly accounted for by the bank failures in 1878, partly by fresh loans to the amount of £86,000,000 (1874-78) to foreign countries, and partly by the increased deposits in the Bank of England. The two latter items together make up £98,000,000, against a decline of £80,000,000 in joint-stock banks.

The ratio between deposits in the joint-stock banks and capital is shown as follows:—

In England as 5 to 1.
In Scotland as 5½ to 1.
In Ireland as 3 to 1.

The profits on resources, that is, on capital and deposits, has been lowest in London.

English Provincial Banks .	2	per cent	per annum.
Irish Banks	1⅞	,,	,,
Scotch Banks . . .	1½	,,	,,
London Banks . . .	1¼	,,	,,

As a rule the joint-stock banks with largest capital give the smallest dividends: the returns for 1877 (omitting the Bank of England) show as follows:—

Dividend.	No. of Banks.	Capital.	Average capital.
20 per cent or upwards .	18	£5,828,000	£320,000
15 to 20 per cent . .	28	12,684,000	453,000
10 to 15 per cent . .	44	21,916,000	500,000
5 to 10 per cent . .	15	6,620,000	440,000
Under 5 per cent . .	4	564,000	140,000
Average 14 per cent	109	£47,612,000	£440,000

The banks of the United Kingdom are owned by 88,000 shareholders, the average capital being £1000 to each shareholder of Scotch banks, £780 for English, and £720 for Irish banks. This does not include Anglo-foreign or Colonial banks. A complete idea of the banking business of Great Britain may be obtained from the following Table, in millions sterling:—

Class.	No.	Capital (Market value).	Deposits.	Discounts.
English . . .	119	£112	£266	£206
Scotch . . .	10	20	68	63
Irish . . .	9	18	40	38
Colonial . . .	27	32	89	123
Anglo-foreign . .	22	18	18	47
	187	£200	£481	£477

The Bank of England, as compared with the whole banking power of the United Kingdom, showed as follows:—

	Bank of England.	Other banks.	Total.
1850 . .	14 per cent.	86 per cent.	100
1874 . .	9 „	91 „	100
1879 . .	11½ „	88½ „	100

In the last thirty years the progress of the Bank of England has been as follows:—

	Emission.	Deposits.	Bullion.
1851 .	£21,000,000	£17,000,000	£16,000,000
1861 .	21,000,000	18,000,000	14,500,000
1871 .	25,500,000	28,000,000	23,000,000
1879 .	29,000,000	37,500,000	35,000,000

The rate of interest has fluctuated more in the last quarter of a century than in the previous 156 years since the foundation of the Bank :—

	Highest.	Lowest.	Average.
1694 to 1800 . . .	6	3	4½ per cent.
1801 to 1850 . . .	8	2½	4½ „
1851 to 1870 . . .	10	2.	4½ „
1871 to 1876 . . .	9	2	3½ „

It is computed that the bills in circulation in the United Kingdom average £350,000,000, of which about £3,000,000 mature daily. The business passes through the following hands :—

Bank of England	£18,000,000	5 per cent.
London Banks	140,000,000	40 „
London Discounters	140,000,000	40 „
Provincial, Irish, and Scotch Banks .	52,000,000	15 „
	£350,000,000	100 „

The increase of banking business in forty years is shown by the returns of the London Clearing-house :—

1839. Average £3,100,000 daily.
1877. Average £17,000,000 daily.

The transactions, therefore, are at present twice the magnitude of the commerce of the whole world. So much is the system of bills and banking identified with the credit of the country, that we are able to do with much less coin than Continental nations. The actual coin in circulation is supposed not to exceed £73,000,000 gold, and £7,000,000 silver; or, including the coin and bullion of the banks, a total of £114,000,000. The actual amount coined at the mint from 1840 to 1877 was as follows :—

Gold . .	£180,295,000
Silver . .	14,603,000
	£194,898,000

Nearly half of this coin has, however, found its way to India, Brazil, and other remote ends of the earth.

The total paper money of the United Kingdom is less than 40 per cent of the amount of precious metals in circulation or in bank vaults. If the paper money increased in proportion to commerce, since 1840, it would now be £150,000,000 sterling, or more than three times the actual amount.

	1840.	1878.
Bank of England Notes	£16,000,000	£29,000,000
English Banks	10,000,000	4,500,000
Scotch Banks	3,500,000	6,500,000
Irish Banks	5,500,000	7,500,000
	£35,000,000	£47,500,000

Taking the aggregate of coin and paper money as 100, to show the growth of commerce and bank deposits at various periods, we find the increase has been thus:—

	Money.	Bank deposits.[1]	Commerce.
1840	100	100	190
1860	160	390	520
1877	250	1100	850

This shows that the progress of banking has outstripped all other branches of commercial development.

Savings banks are not of English origin as for some time supposed (see page 38). The first in England was founded by Mrs. Priscilla Wakefield, at Tottenham, in 1803. The growth of these institutions in thirty years is shown in the amount of deposits, as follows:—

	1848.	1877.	Increase.
England	£25,592,000	£62,910,000	152 per cent.
Scotland	1,080,000	6,530,000	502 „
Ireland	1,356,000	3,528,000	160 „
	£28,028,000	£72,968,000	

The average sum to each depositor is about £30 sterling.

[1] Including all manner of bank liabilities to public.

The proportion of savings in these banks, compared with population, is as follows :—

In England	50s.	per inhabitant.
„ Scotland	37s.	„
„ Ireland	13s. 4d.	„
Average for United Kingdom	42s.	„

Besides the banking companies already mentioned, various joint-stock companies have come into existence in the last thirty years for the promotion of all branches of industry. Between 1856 and 1868 the number of new companies, and their capital, astonished mankind; the result was as follows :—

	New Companies.	Capital.
1856-68	7056	£893,000,000
1868 (Survivors) . .	122	389,000,000
Collapsed . .	6934	£504,000,000

Several of the above were known as Wild-Cat enterprises, and some hundreds went down in the crisis of 1866.

Co-operative and friendly societies have sprung up in a few years to a magnitude that affords another proof of the great wealth of the nation. The first co-operative society was started at Rochdale, in 1844, by twenty-eight workmen, who subscribed £1 each; the same society now numbers 9000 members, and its annual profits average £550,000. Its success pointed the way for others, which have proved no less prosperous; the shares, for example, of the Civil Service Co-operative Company, which cost £2, are now worth £90 each. The growth of these societies in the last fifteen years has been as follows :—

	1864.	1878.
No. of societies . . .	395	1,489
„ members . . .	130,000	641,000
Capital	£685,000	£6,200,000

There are, moreover, 26,924 friendly societies with an

aggregate of 5,588,000 members, whose annual subscriptions reach £17,580,000, their actual capital being £41,500,000 sterling.

FINANCES.

When Mr. Mundella recited the eight secrets of the greatness of Britain, he might have added a ninth, or rather put it in the first place, namely good finances. It is very remarkable that while other nations have enormously increased their public debts, and trebled their taxation, we have lived within our income, and paid off £140,000,000 of our National Debt. In fact, our taxes are lighter than they were seventy years ago.

	1811.	1879.
Taxes per Inhabitant	83s.	49s.
Commerce	£2 : 10s.	£19

Moreover, the wealth and resources of the United Kingdom are now four times greater than in the time of our grandfathers, and hence Leroy Beaulieu points out that the burden of the British National Debt is trifling compared to that of other countries, and is every year growing lighter. The following Table of this eminent French statist deserves notice :—

	Income of British people.	Burden of debt.
1815 . . .	£350,000,000	9 per cent.
1843 . . .	500,000,000	5½ ,,
1877 . . .	1,120,000,000	2½ ,,

The debt of Great Britain is simply a war-debt, whereas in other countries it often arises from reckless waste and bad finances. We have spent in 190 years the sum of £1,234,000,000 sterling on wars (see Appendix), the campaigns against Napoleon standing for £831,500,000.

The progress of the debt and the rise of our national credit may be seen as follows:—

	National Debt.	Consols.
1801 .	£599,000,000	3 per cents at 63 average.
1811-20 .	916,000,000	„ 66 „
1821-30 .	812,000,000	„ 84 „
1831-40 .	785,000,000	„ 89 „
1841-50 .	789,000,000	„ 92 „
1851-60 .	790,000,000	„ 95 „
1879 . .	777,000,000	„ 99 „

The lowest year was 1804, when Consols averaged 56¾; the highest was 1853, showing an average of 100¼ on the year. The maximum reached was 101¼ in December 1852.

The holders of Consols are not, as in France, the peasants and operatives, but persons of the moneyed class. Hence, instead of five or six million holders, there is little over a quarter of a million, and the number has declined in the last fifty years, as follows:—

	Holders of Consols.
1831 . . .	281,145
1865 . . .	263,931
1874 . . .	228,700

As the debt of Great Britain is held at home it is no drain upon the country. In 1817 it averaged £45 for each inhabitant; at present it is barely £23; and if we include the municipal and other local debts,[1] the average will not exceed £27 per head.

The Budgets for ten years, 1869 to 1878, made up the following total:—

Revenue . . .	£757,000,000
Expenditure . .	743,500,000
Surplus . .	£13,500,000

[1] The amount of local debt in 1877, in England and Wales, was £106,500,000 sterling.

Local taxation has, meantime, increased remarkably in the last ten years, the expenditure growing in England as follows :—

	1867-68.	1874-76.
Public works	£6,218,000	£9,595,000
Poor relief	7,419,000	7,681,000
Interest on debts	4,575,000	8,539,000
Roads, markets, docks	5,934,000	6,672,000
Police	3,219,000	3,749,000
Schools	42,000	2,200,000
Charities, asylums	2,830,000	4,441,000
	£30,237,000	£42,877,000

The local taxation has risen 133 per cent since 1860 (when it was £17,800,000), and seems destined to rise to a level with the Imperial budget. The principal cities are more heavily taxed for local than for national purposes, and this is chiefly owing to the cost of those sanitary improvements and schools that have so notably reduced mortality and crime. The valuation, expenditure, and debt of the principal cities are as follow :—

	Valuation.	Expenditure.	Debt.
London	£21,088,000	56s. per inhab.	£7 per inhab.
Liverpool	2,940,000	66s. 6d. ,,	9 ,,
Manchester	1,972,000	104s. ,,	13 ,,
Birmingham	1,284,000	34s. 6d. ,,	3 ,,
Leeds	919,000	75s. ,,	13 ,,

The local expenditure is lighter in the sister kingdoms than in England.

	1876-78.[1]	Per inhabitant.
England	£48,406,000 per annum.	39 shillings.
Scotland	3,203,000 ,,	18 ,,
Ireland	4,615,000 ,,	17 ,,
United Kingdom	£56,224,000 ,,	30

[1] The returns for England and Wales correspond to 1878, those for Scotland and Ireland to 1876.

This total of £56,000,000 is obtained partly by poor-rates, partly by tolls and municipal taxes.

Poor-relief is, strange to say, the heaviest burden on the richest nation of the age. It is, moreover, exactly 100 per cent heavier in England than in Ireland, the average for the last ten years showing thus:—

Poor-rate in England	. .	7s. 2d. per inhabitant.
„ Scotland	. .	5s. 4d. „
„ Ireland	. .	3s. 7d. „

It is likely the poor-rate in Ireland would have been heavier, but for the money sent home by Irishmen in America.[1] The average returns of pauperism in the United Kingdom for the last ten years have been:—

	No. of Paupers.	Poor Relief.
England	895,000	£7,640,000
Scotland	64,000	880,000
Ireland	78,000	905,000
	1,037,000	£9,425,000

The expenditure for schools is much more satisfactory, for whereas three million children are educated at 35s. per head, the maintenance of paupers costs nearly £10 per head. Sanitary committees spend £18,000,000 per annum, or 30 per cent of the total municipal and county expenditure. The incidence of taxation, general and local, compared with income, is 13 per cent in England, 12 per cent in Ireland, and 10 per cent in Scotland:—

	England.	Ireland.	Scotland.	United Kingdom.
Income	£37 p. inh.	£18 : 5s. p. inh.	£30 p. inh.	£33 p. inh.
National taxes	55s. „	26s. „	42s. „	49s. „
Local taxes . .	39s. „	17s. „	18s. „	30s. „
Net income	£32 : 5s. p. inh.	£16 p. inh.	£27 p. inh.	£29 p. inh.

[1] Between 1848 and 1868 those in the United States sent home £14,968,600 to their friends.

These figures will bear comparison very favourably with those of any other country (see page 42).

AGRICULTURE.

In no country has the science of agriculture been brought to greater perfection than in the United Kingdom. The heaviest crops and finest cattle in the world are raised in England; but there is still such a vast portion of Scotland and of Ireland unreclaimed, that only 64 per cent of the United Kingdom is arable land, and the area under crops is barely 18 million acres, or one-fourth of the total extent. As farming is conducted in so costly a manner, involving more capital than in other countries, the number of proprietors is much smaller than might be expected from the population and extent of the British Islands.

The area of the United Kingdom is 77,829,000 acres, of which 7 millions are occupied by towns, rivers, and lakes. The remainder is owned as follows:—

Estates.	No.	Area.	Average.
1st class . .	874	9,367,000	10,700 acres
2d „ . . .	41,650	19,473,000	4,700 „
3d „ . .	138,600	41,439,000	300 „
	180,524	70,279,000	390 „

There are also 973,292 persons who own an acre each, for suburban residences.

The division of property is greater in England than in the rest of the kingdom.

	Area.	Proprietors.	Average.
England and Wales .	37 million acres.	154,774	240 acres.
Ireland . . .	20 „ „	17,510	1140 „
Scotland . . .	19 „ „	8,240	2300 „

Besides 180,000 owners of estates there are 838,000 tenant farmers,[1] making a total of 1,018,000 farms in the United Kingdom, an average of seventy acres each. The proportion, however, of cultivated land is much less.

	Farmers.	Average Farms.
Great Britain . . .	555,000	57 acres.
Ireland	463,000	34 „
	1,018,000	47 „

The returns for 1878-79 show as follows :—

	Cultivated.	Uncultivated.	Area.
England, Wales, etc. .	27,687,000	9,826,000	37,513,000
Scotland . . .	4,690,000	14,806,000	19,496,000
Ireland	15,345,000	5,475,000	20,820,000
	47,722,000	30,107,000	77,829,000

The reclamation of waste land has been more active in recent than in former years.

	Acres.	Per Annum.
1800 to 1829 . . .	3,380,000	112,000 acres.
1830 to 1869 . . .	2,217,000	53,000 „
1870 to 1879 . . .	1,687,000	169,000 „
In 79 years . .	7,284,000	70,000 per annum

Thus we have reclaimed in the present century an area nearly double that of all the arable land in Scotland. But while the extent of cultivated land increases, the production does not keep pace, since the farmers are turning away from agriculture to devote themselves to pastoral industry; this is particularly the case in Ireland, as the following Table shows :—

[1] Not counting 111,000 cottiers in Ireland holding less than five acres.

Arable.	1870.	1879.	
Great Britain .	18,335,000	17,943,000	1½ p. c. less.
Ireland . .	5,740,000	5,304,000	14 „ „
Total Arable .	24,075,000	23,247,000	
Pasture.			
Great Britain .	12,073,000	14,432,000	20 p. c. increase.
Ireland . .	10,152,000	10,043,000	
Total Pasture .	22,225,000	24,475,000	
Grand Total .	46,300,000	47,722,000	

This change of farming is easily explained by the fall in grain and no less remarkable rise in butcher's meat and dairy produce.[1] Meantime it must be borne in mind that a much larger area is now under tillage than fifty years ago, as appears from comparing Porter's Tables for 1827 with those of the current year:—

	1827.	1879.	
Arable .	19,136,000 acres.	23,247,000 acres.	21 p. c. increase.
Pasture .	27,387,000 „	24,475,000 „	11 „ decrease.

If we take, however, the arable extent in reference to population, we find there were as follows:—

1827 . . . 83 acres for 100 inhabitants.
1879 . . . 68 „ 100 „

The average returns for the last ten years (1869-78) may be summed up thus:—

	Acres.	Crop.	Value.
Wheat . .	3,510,000	91 million bushels.	£28,000,000
Barley, oats, etc.	7,750,000	320 „ „	55,000,000
Green crops .	5,140,000	...	42,000,000
Pasture . .	29,450,000	...	140,000,000
Fallow . .	1,000,000	...	...
	46,900,000		£265,000,000

[1] We find, for example:—

	1845-55.	1874-79.
Beef and mutton .	4s. 4d. per stone.	6s. 6d.
Wheat . . .	7s. 3d. per bushel.	5s. 10d.

In a word, meat has risen 50 per cent, and wheat has fallen 20 per cent.

Improved machinery effects a saving of one-third of the labour. In 1821, says Professor Caird, there were 20 per cent of the population of England engaged in agriculture; in 1876 the ratio had fallen to 9 per cent, while the area under cultivation was 20 per cent larger. The number of farm-labourers in 1871 was 17 per cent less than ten years before. Moreover, the yield of wheat per acre is much greater than in the last century. Arthur Young's Table, for a number of years, showed 23 bushels per acre in England, whereas Professor Caird shows 28 bushels for a period of twenty years.[1] The wheat crop averages twelve-fold. The returns for barley show 37 bushels, and for oats, 46 bushels per acre.

As wheat can be profitably raised on the banks of the Danube or Mississippi at three shillings per bushel, and its conveyance is now so facilitated by railways and steamers, it is not surprising to find that in the past ten years the wheat area of the United Kingdom has diminished one-fourth, say a million acres.

The increased consumption of imported grain is shown in the following Table:—

	Native grown.	Imported.	Total consumption.
1811 to 1830 . .	97 million bushels.	4	101 million bushels.
1831 to 1850 . .	113 „ „	14	127 „ „
1851 to 1870 . .	109 „ „	58	167 „ „
1871 to 1879 . .	91 „ „	111	202 „ „

Nevertheless, if England by any contingency were compelled to raise wheat, it would be sufficient to sow an area of five counties the size of Devonshire to supply all our needs for the three kingdoms, at seven bushels per head. An acre of wheat in England feeds four persons, in France two, in Russia and United States one and a half; but the cost of production in this country is out of all ratio. In

[1] The minimum was 11 bushels in 1853, the maximum 40 in 1864.

the close of the eighteenth century the best lands in Essex and Staffordshire rented for 8s. per acre; the price of wheat (1780-1800) averaged 52s., or 15 per cent higher than at present, and wages were less than half what they are now.[1] In these three items are explained the difficulties that now surround agriculture in this country.

The estimates of annual rental of the lands of the United Kingdom have risen as follows:—

1801	£23,500,000
1834	34,300,000
1865	62,100,000
1878	67,200,000

At present the average rental seems to be 14s. per acre for Ireland,[2] and 18s. for Great Britain, which would give, at thirty years' purchase, the following value for the United Kingdom:—

	Per Acre.	Sum.
Great Britain . . .	£27	£1,590,000,000
Ireland	21	420,000,000
		£2,010,000,000

The average income of the proprietors on the above scale would be thus:—

	No.	Rental.	Average.
Great Britain .	163,014	£53,000,000	£325 per annum.
Ireland . .	17,510	14,000,000	800 „

This does not, however, take into account the mortgages which absorb more than half the landed revenue of the kingdom; the amount of mortgages in 1876 was found to be 58 per cent of the total value.

[1] Professor Caird shows the adverse condition of farmers, as compared with thirty years ago, thus:—

	1847.	1877.	Observation.
Wheat . .	53s. per qr.	48s. per qr.	Fall of 10 per cent.
Wages . . .	19 pence a day.	30 pence.	Rise of 55 „

[2] That is for the whole area, including mountain and bog.

Although the United Kingdom is one of the richest countries in the world in cattle, the supply of dairy produce and meat is short of our requirements. There are at present 3,700,000 milch cows, producing annually 1600 million gallons of milk, of which one-fourth is used for making butter and cheese; the importation of foreign cheese and butter is now equal to the production in the United Kingdom.

The farm stock in 1879 was as follows:—

	Number.
Horned cattle	9,912,000
Sheep	32,174,000
Horses	2,866,000
Pigs	3,390,000

The amount of capital invested by tenant farmers is variously estimated from £8 to £10 per acre, say £420,000,000 sterling, viz.—

	Capital.
Leaseholders	£340,000,000
Tenants at will	80,000,000

As the agricultural conditions of Great Britain and Ireland are very different, it may be well to consider them separately.

Great Britain.

Notwithstanding the bad crops and the depression in agricultural interests during the last few years, the actual decline in tillage is by no means so great as supposed. Comparing the returns for 1878 and 1879 with those of ten years ago, we find as follows:—

	1868-1869.	1878-1879.
Wheat	3,690,000 acres	3,025,000 acres
Barley	2,203,000 „	2,530,000 „
Oats	2,750,000 „	2,680,000 „
Potatoes	528,000 „	534,000 „
Turnips	2,185,000 „	2,020,000 „
Sundries	1,794,000 „	1,981,000 „
	13,150,000	12,770,000

Neither do we find reason for alarm in the returns of farming-stock, which have increased in value more than 3 per cent in ten years, the numbers being thus :—

	1869. Number.	1879. Number.
Horses . . .	2,080,000	2,291,000
Cows	5,436,000	5,857,000
Sheep . . .	30,700,000	28,152,000
Pigs	2,320,000	2,090,000

No country surpasses ours in the various breeds of cattle, the improvement of which is attended to at enormous outlay. For example, in 1874, Mr. Loder paid £2000 for a calf only eight months old. The average weight of our sheep is 100 lbs. of meat, against 40 lbs. in France.

The number of farmers in Great Britain being 555,000, it appears they cultivate 23 acres each under tillage, and 34 under pasture, the product being equal to £335 per annum for each farmer, or £6 per acre.

The farms are divided into three classes as follows :—

	Number.	Probable Area.	Average.
Under 50 acres . . .	387,000	7,740,000 acres	20 acres
From 50 to 100 acres .	67,000	4,700,000 „	70 „
Over 100 acres . . .	101,000	19,935,000 „	197 „
	555,000	32,375,000	57

The above comprehends only the cultivated area of the island of Great Britain.

Besides agricultural and pastoral farming, there has been recently great progress in forest-planting. The fourth Duke of Atholl, who died in 1830, boasted of having planted 28 million trees on an area of 16,500 acres. An increase is also observable in the yield of the Crown forests, from £280,000 in 1859, to £410,000 in 1879. The area under woods in the United Kingdom is 2,516,000 acres

(including orchards), equal to 3 per cent of the total superficies.

IRELAND.

The improvement since 1841 surpasses the progress made in any other country in Europe. This has arisen in great measure from the emigration of peasant farmers, whose labour was so ill-directed that in 1840 it took 67 Irishmen to raise food for 100 inhabitants. The farms are now larger, labour is more productive, and the value of farm-stock compared with population is £10 per inhabitant, or double the ratio of Europe. Comparing the farm-holdings of 1841 with the present, we find—

	1841.		1879.	
	No.	Ratio of Total.	No.	Ratio of Total.
From 1 to 15 acres	563,000	84 per cent	232,000	43 per cent
Over 15 acres .	127,600	16 „	298,818	57 „
No. of farms .	690,600	.	530,818	

The holdings under 15 acres have diminished 60 per cent, while the farmers over that area have grown almost threefold. So beneficial a change has been in great measure the result of the Encumbered Estates Law, which brought to the hammer several thousand estates of insolvent proprietors. The first sale took place on February 19, 1850, and the official report of 1860 showed for ten years, sales amounting to £25,000,000 sterling, of which the creditors took no less than £24,000,000. The estates were sold in lots averaging 400 acres, and for the first three years the prices obtained showed a medium of only £7 per acre. In recent years the average price has doubled in all parts of Ireland. Rural interests, nevertheless, suffer from the want of an "entente cordiale" between landlords and tenants. The owners of one-sixth of the country live in

England or abroad, as appears from the following Table, published in 1871 :—

Landlords.	No.	Average Estate.	Area.	Ratio of Ireland.
Resident . .	5589	1600 acres	8,950,000 acres	45 per cent
Resident . .	5982	60 ,,	3,590,000 ,,	18 ,,
Living in Dublin .	4496	888 ,,	4,075,000 ,,	21 ,,
Absentees . .	1443	2220 ,,	3,205,000 ,,	16 ,,
	17,510	1140 ,,	19,820,000 ,,	100 ,,

The returns for 1878 show that there are 463,000 farmers (not counting those under five acres), which gives a ratio of thirty-four acres arable land to each, viz.—

155,000 leaseholders.
308,000 owners and tenants-at-will.

463,000 farms.

They may be divided into five classes, according to extent, as follows :—

From 5 to 15 acres	. .	165,000 farms
,, 15 ,, 30 ,,	. .	138,000 ,,
,, 30 ,, 100 ,,	. .	129,000 ,,
,, 100 ,, 500 ,,	. .	30,300 ,,
Over 500 ,,	. .	1,518 ,,
		463,818 ,,

The result of the improved mode of farming is shown as follows :—

	1841.	1876.
Acres cultivated . .	13,464,000	15,345,000
Average to agricultural population . . .	2½ acres	4 acres
Value of crops . . .	£23,758,000	£36,470,000
Do. of farm stock . .	£22,370,000	£52,430,000

Since 1841 Ireland has reclaimed 1,900,000 acres, and thus increased the capital wealth of the country by £30,000,000 sterling. Since 1841 she has taught her

people to cultivate 60 per cent more land per head than before, and made each acre produce 40 per cent extra. Since 1841 the uncultivated area has been reduced (from 36 per cent) to 25 per cent of the total. According to Sir Robert Kane there are still 2,600,000 acres that might be reclaimed. It is stated that even at present 6 per cent of arable land is lost under hedges and fences, say 918,000 acres, which ought to produce £2,500,000 sterling per annum.

The increase of farm-stock has been as follows:—

	1841.	1879.	Increase.
Cows . .	1,840,000	4,067,000	120 per cent
Horses . .	552,000	575,000	4 ,,
Sheep . .	2,091,000	4,017,000	96 ,,
Pigs . .	1,353,000	1,469,000	9 ,,
Value . .	£22,370,000	£52,430,000	134 ,,

Such a development of pastoral industry has caused tillage to become of secondary importance, being less profitable. Forty years ago it was computed that 3 per cent of the agricultural population of Ireland raised wheat for exportation to England.[1] At present Ireland hardly raises enough wheat for the consumption of Dublin, and has to import 33,000,000 bushels yearly. The chief decline of agriculture has been, in the last ten years, as follows:—

	Average, 1868-69.	Average, 1878-79.
Wheat	283,000 acres	130,000 acres
Oats and Barley . .	1,892,000 ,,	1,703,000 ,,
Potatoes	1,037,000 ,,	876,000 ,,
Turnips	321,000 ,,	339,000 ,,
Flax	218,000 ,,	128,000 ,,
Sundries	1,797,000 ,,	2,128,000 ,,
	5,548,000 ,,	5,304,000 ,,

[1] Wheat shipments to England during twenty years showed an average of 20,000,000 bushels; enough to feed England and Scotland for three months in each year.

The decline in the crops has been in similar ratio.

	1868-69.	1878-79.	Decrease.
Wheat	7,150,000 bushels	3,540,000 bushels	50 per cent
Oats and Barley	65,210,000 ,,	64,060,000 ,,	1½ ,,
Potatoes	148,000,000 ,,	116,000,000 ,,	22 ,,
Flax	27,000 tons	24,500 tons	9 ,,

Although the disastrous season of 1879 has caused severe losses in farming interests, the political economist may entertain well-grounded hopes for the future of Ireland.[1]

FOOD-SUPPLY.

The United Kingdom raises sufficient food for only half of its population, as shown in the following Table :—

	Home Grown.	Imported.	Total.
Wheat	45 per cent	55 per cent	100
Butter and Cheese	53 ,,	47 ,,	100
Potatoes	94 ,,	6 ,,	100
Meat	70 ,,	30 ,,	100

Only forty years ago the best economist in England, Mr. Porter, said :—" Great Britain can never obtain the bulk of her food-supply from abroad, as all the shipping in the world, say 6,000,000 tons, would be insufficient to carry food for her population." In 1878 the quantity of food im-

[1] Professor Hancock's Tables for 1878 show an unprecedented accumulation of wealth, viz.—

Irish Banks	£35,053,000
Government Consols	31,908,000
Irish Railway Stocks, etc.	43,639,000
	£110,600,000

The bank accumulations have doubled in eighteen years, the amount in 1860 having been only £15,609,000. The other accumulations being in like ratio point to an aggregate increase of £60,000,000 since 1860, which shows that for eighteen years Ireland has steadily accumulated £3,000,000 per annum, or almost £10,000 a day.

ported was in excess of the tonnage of the world's shipping when Mr. Porter wrote.

It is most fortunate that we obtain supplies in such abundance from the United States and other countries.

The less wheat we grow in the United Kingdom, the cheaper becomes this great element of food, and the larger the consumption.

	Native Grown.	Imported.	Market Price.	Consumption.
1811-1830 . .	97 p. c.	3 p. c.	74s.	258 lbs. per inhab.
1831-1850 . .	87 „	13 „	55s.	270 „ „
1851-1860 . .	70 „	30 „	54s. 8d.	311 „ „
1861-1870 . .	60 „	40 „	52s.	335 „ „
1871-1879 . .	45 „	55 „	48s.	341 „ „

Thus, in half a century the price has fallen 35 per cent, and the consumption risen 32 per cent per inhabitant. How closely the welfare of the poorer classes is identified with the price of grain has been shown by Dr. Farr, as follows :—

	Wheat.	Death-rate.
1824-1828 . .	60s. per quarter	222 per 10,000 inhabitants
1834-1836 . .	45s. „	216 „ „

This would go to prove that a rise of 2s. per bushel causes an increase of 3 per cent in the bills of mortality.[1] The relation between the price of grain and the number of paupers as taken from the tables of thirty years (see Appendix) may be summed up thus :—

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[1] Dr. Farr further shows that by comparing the three years (between 1830 and 1845) in which wheat was highest, with three years in which it was lowest, the death-rate of England and Wales appeared as follows :—

3 highest years, 227 deaths per 10,000 inhabitants.
3 lowest years, 211 deaths per 10,000 inhabitants,

being a difference of 7 per cent in the mortality.

	Wheat.	No. of paupers in England.	Ratio to pop.
1850 to 1860 .	54s. 8d.	872,000	4½ per cent.
1861 to 1870 .	52s.	953,000	4½ „
1871 to 1878 .	48s.	880,000	3½ „

At present we import nearly 6,000,000 tons grain annually, of which 2,500,000 are wheat, and 1,500,000 tons maize. The imports of 1877 and 1878 give the following average per annum :—

Wheat.	Tons.	Value.	Per ton.
Russian . .	497,000	£5,475,000	£11
United States .	1,257,000	17,210,000	13 : 10s.
Germany . .	264,000	4,360,000	17
India . .	198,000	2,288,000	11 : 10s.
Canada . .	138,000	1,881,000	14
Australia . .	47,000	685,000	15
Turkey . .	199,000	2,317,000	11 : 10s.
	2,600,000	£34,216,000	£13
Other Grain .	2,850,000	17,771,000	6
Total Imports of Grain	5,450,000	£51,987,000	

Besides 6⅛ bushels of grain per inhabitant, we consume 4 bushels of potatoes, which contain the same amount of nitrogenous stuff as 1 bushel of wheat. Adding to these the maize, oat-meal, etc., we shall have an equivalent of 10 bushels of wheat per annum for each inhabitant.

The acreage under potatoes has declined one-fifth since 1871, and hence the importation of this article has septupled; at present we import 20 lbs. potatoes per inhabitant.

The importation of butter, cheese, and eggs in the years 1825 to 1830 seldom exceeded £500,000; at present these items make up £20,000,000. The consumption has grown much more rapidly than population, showing that the people are better fed than in the last generation.

The imports of butter and cheese, compared with the consumption, are as follows :—

	Native.	Imported.	Total.
Butter . .	90,000 tons	90,000	180,000 tons
Cheese . .	126,000 ,,	98,000	224,000 ,,
	216,000 ,,	188,000	404,000 ,,

Hence it appears that we consume annually 12 lbs. butter and 15 lbs. cheese per inhabitant.

The meat consumption of the kingdom amounts to a value of £106,000,000, one-third of the total quantity being imported.

	Weight.	Value.
Native . .	1,150,000 tons	£80,000,000
Imported . .	520,000 ,,	26,000,000
	1,670,000 ,,	£106,000,000

This is equivalent to 1 cwt. per inhabitant, which is three times the ratio of consumption on the Continent. Since 1852 the importation of bacon has increased forty-fold, being now 170,000 tons, or one-third of the meat-supply from abroad: this bacon represents 3,000,000 hogs, or rather the maize crop of 3,000,000 acres, packed close in barrels under the form of American hams, to feed one-tenth of our inhabitants. We also receive from the United States and Canada 170,000 tons of beef, including live cattle, and meat packed in ice-chambers. Furthermore, we draw supplies from Holland, Denmark, and other countries. But for this import of meat we should see beef and mutton at famine prices, for even with this aid from abroad the market rates are 50 per cent higher than 25 years ago.

1845-55 . . .	4s. 4d. per stone
1875-79 . . .	6s. 6d. ,, ,,

As soon as electricity or some other motive power, cheaper than coal, be devised, the great cattle farms of Australia and South America will be brought nearer to

Great Britain, for food, after all, is a question of freight. In the eighteenth century London often paid famine prices for beef, while the highest price north of the Tweed was only 1½d. per lb.

Besides the above chief articles of food, we are indebted to foreign nations for what are unjustly termed luxuries, and the consumption whereof is also rapidly increasing.

	1860.	1877.
Sugar	33 lbs. per inhab.	63 lbs. per inhab.
Tea	2½ ,, ,,	4½ ,, ,,
Coffee and cocoa	1⅓ ,, ,,	1⅓ ,, ,,
Tobacco	1¼ ,, ,,	1½ ,, ,,
Wine	¼ gal. ,,	½ gal. ,,

Coffee has declined 22 per cent, but the consumption of cocoa is now three times as much per inhabitant as in 1860.

The consumption of liquor has increased very notably in the last twenty years, and shows that some efforts must be made to check it.

Per 100 inhab.	1840.	1860.	1877.
Spirits	97 gallons	93	96
Beer	2400 ,,	2200	3300
Wine	25 ,,	22	53

In fact the consumption of alcohol, per head, is almost 38 per cent more than it was in 1860, as will be seen by reducing all the above to spirit level.[1]

	Alcohol.
1840	325 gallons per 100 inhabitants
1860	301 ,, ,, ,,
1877	402 ,, ,, ,,

The relative consumption in each of the three kingdoms has increased as follows in the last ten years (reducing all to alcohol, as above) :—

[1] At the rate of 11 gallons beer to 1 gallon spirits, and 33 gallons wine to 10 gallons spirit (*Professor Levi*).

Per 100 inhabitants.	1868.	1877.	Increase.
England and Wales .	401 gallons	440 gallons	10 per cent
Scotland . .	275 „	361 „	32 „
Ireland . .	170 „	243 „	40 „
United Kingdom	353 „	402 „	14 „

If the above returns for 1877 be dissected, they will be found made up as follows:—

	England.	Scotland.	Ireland.	Total.
Spirits	16,415,000 gals.	7,006,000 gals.	6,381,000 gals.	29,802,000
Beer[1]	982,000,000 „	54,000,000 „	59,000,000 „	1,095,000,000
Wine	...	...	...	17,565,000

The value of liquor consumed has risen as follows:—

	Gallons alcohol.	Value.	Per inhabitant.
1868 .	106 million	£118,000,000	78 shillings
1877 .	136 „	152,000,000	96 „

This is nearly £5 per head; and it seems the working-classes spend relatively ten times as much on liquor as the educated classes. For example, the London clubs, in 1877-78, showed a consumption equal to 1s. 6d. daily for each member, which is less than the cost of a pint of wine. In Paris the average is said to be 10 francs, or 8s. per head, in the hotels and clubs. Since the reduction of the wine duties in England (from 6s. to 1s.) by the Cobden treaty, the importation of wine has risen from 6½ to 17 million gallons—ten millions from Spain and Portugal, and six millions from France.

Drunkenness meantime has increased notably among the lower classes, especially at Glasgow and Liverpool. Sheriff Alison says, "In Glasgow 30,000 people get drunk every Saturday night, and crime has increased six times faster than population, while the death-rate is (after Dublin) the highest in the United Kingdom." In Scot-

[1] Bushels of malt 54,162,000 for England.
„ „ 3,022,000 for Scotland.
„ „ 3,343,000 for Ireland.

land this vice is greatest on Sundays, as appears from the police-records :—

Average during the week . . .	450 cases daily
„ on Saturday and Sunday .	840 „ „

making 200,000 cases per annum, or 1 in 27 of the population. The number of drunkards in Liverpool is also very great, comparing with two other English towns as follows :—[1]

	Drunk in pop.
Liverpool . . .	1 in 24
Nottingham . .	1 „ 112
Norwich . . .	1 „ 367

The convictions for drunkenness in England and Wales have risen as follows:—[1]

	Per annum.	Ratio of pop.
1857-1860 . . .	52,100	2½ per 1000
1867-1870 . . .	90,600	4 „
1875-1878 . . .	204,000	8 „

It appears that 85 per cent are men, and 15 per cent women, the same proportion of sexes as is found also on the criminal calendar. Dr. Gilbert asserts that 54 per cent of the cases of insanity in the United Kingdom arise from drink, but the director of Colney Hatch Asylum reports only 38 per cent. Mr. Neison's Tables show that habits of intemperance produce death as follows :—

Women	die in 14 years
Gentlemen	„ 15 „
Tradesmen	„ 17 „
Mechanics	„ 18 „
Beer	kills in 22 „
Spirits	„ 17 „
Both mixed	„ 16 „

The expectancy of life for a drunkard, as compared with a sober person, is as follows :—

[1] Pres. Shaw Lefevre's address in 1877.

Age.	Drunk.	Sober.
20 . . .	15 years	44 years
30 . . .	14 „	36 „
40 . . .	11 „	29 „

Deaths from drunkenness averaged 29 per million inhabitants in 1870, rising to 34 in 1873, and to 45 per million in 1874. The ratio of sexes was as 77 males to 23 females.

CONDITION OF THE PEOPLE.

So great is the change in this respect during the present century, that we should find it intolerable to return to the *modus vivendi* of our grandfathers.

No railways or steamboats, no gas or water-supply, no telegraph or penny post, no cheap newspapers or books, no civil rights for dissenters, no schools or libraries for the poor, no police, no lifeboat associations,—in a word, few of the appliances of modern civilisation. On the other hand, many of the institutions of that time were barbarous. There are persons still living in London who may have assisted at the execution of the Rev. Thomas Scott Smyth, for performing divine service at St. Martins-in-Fields with a false license; as there are also many who can remember seeing people hanged for sheep-stealing or fraudulent bankruptcy. Until 1824 it was a punishable offence for any one to shear a sheep within 5 miles of the sea-coast, the law also forbidding the exportation of wool. It is within a still later period that the Navigation laws, the restrictions on aliens, the impressment of seamen, and a host of other prejudicial codes and practices have been swept away, to allow the proper development of trade and progress. But it is not so much with the laws or manners of the past generation that we should compare present English society, as with the condition of surrounding

nations. Our people are better fed, can do more work, and possess a greater amount of national wealth, than any other nation. Our banks, shipping, railways, docks, and other elements of national industry, have doubled during the last twenty-five years, and all the comforts of life are more within the reach of the million than before. Schools and libraries have multiplied, as also charitable institutions, and the statistics of crime for the United Kingdom in 1877 show a decline of 64 per cent since 1840. The condition of women has notably improved: as the *Edinburgh Review* says, "Instead of 6,000,000 adult English women depending on the men for support, 3,000,000 now earn their living, of whom 2,000,000 are independent, including 1,071,000 housemaids, 362,000 milliners, 232,000 laundresses, 85,000 teachers, and 86,000 who keep lodging-houses."

Taxation is lighter, the National Debt has been reduced, our habitations are improved, the value of houses built in the last seventy years being estimated by the *Builder* at £1,220,000,000 sterling. The rate of mortality has been so lowered by sanitary improvements that the span of life is now six years longer than half a century ago.

The middle classes enjoy more comforts than noblemen could command in the last century. Their habits are so ameliorated that drunkenness is no longer regarded as a fashionable vice, but a degradation. They possess civil rights on the amplest basis, and the masterpieces of learning that were formerly reserved for the owners of palaces and libraries are now found in the dwellings of merchants, shopkeepers, and artisans.

The rights of citizenship have been extended in recent years in the following manner:—

	1834-35.	Ratio to pop.	1878-79.	Ratio to pop.
Voters in England . .	668,000	4½ per cent	2,416,000	10 per cent
Do. „ Scotland . .	73,000	3 „	304,000	8½ „
Do. „ Ireland . . .	98,000	1¼ „	231,000	4½ „
Do. „ United Kingdom	839,000	3½ „	2,951,000	8¾ „

The amount of national wealth, as taken from the income-tax returns, represented by each voter in the three kingdoms is as follows:—

In England . . .	£200 per head
„ Scotland . .	177 „
„ Ireland . . .	153 „
„ United Kingdom .	190 „

If we compare the wages of the working-classes fifty years ago, and the price of grain, with those of the present day, we see how much improvement has taken place in the condition of those classes:—

	1821-1840.	1865-1875.
Wheat . . .	58s. per bushel	50s. per bushel
Masons' wages . .	6d. per hour	9d. per hour
Farm-servants' wages	10s. per week	16s. per week
Blacksmiths' „ .	25s „	32s. „
Cotton-spinners' „ .	16s. „	24s. „

In fine, wages have risen 50 per cent, while none of the necessaries (except meat), and few of the comforts of life, are 10 per cent dearer. Mr. Brassey further shows us that wages in England are higher than on the Continent. The superior skill and strength of English workmen are admitted. "A Frenchman," says M. Taine, "works best the first two hours and less well every hour afterwards; an Englishman as efficiently the last hour as at the commencement, and does as much work in ten hours as a Frenchman in twelve." The late Mr. Brassey ascribed his success in carrying out many great works on the Continent to a body of 5000 English navvies who accompanied him everywhere. No less

conclusive is Mr. Redgrave's factory report that "an English operative does as much in 60 hours as a German in 90; and that the average of spindles to each workman is 50 per cent more than on the Continent." Nevertheless, the British Consul in New York states that he believes Americans get more work out of their operatives, because they are more sober than the same class in England.

No more conclusive proof can be adduced of the improved condition of our people than the decline in the criminal calendar, and in the number of paupers :—

	1840-50.	1870-77.
Convictions in England . .	1 in 830 inhab.	1 in 1890 inhab.
„ „ Scotland . .	1 in 875 „	1 in 1440 „
„ „ Ireland . .	1 in 571 „	1 in 2048 „
„ „ United Kingdom	1 in 725 „	1 in 1880 „
Paupers „ „ „	1 in 21 „	1 in 33 „

There are many problems which still occupy the minds of statesmen, especially the relations between labour and capital. The experience, however, of recent years shows that capital has no more than its fair share of profit, and that the wages of artisans have risen far more than the earnings of the educated classes.[1]

MANUFACTURES.

"But for our skill in manufactures we should never have been able to carry on successfully the great war against Buonaparte."—PORTER.

No country in ancient or modern times has surpassed

[1] Mr. Howell, in his examination before the House of Commons, said, "Architects and contractors have to work cheaper now than forty years ago, although the wages of masons and bricklayers have risen 50 per cent. Each block in the fluted columns of the British Museum cost £5, but I should be glad now to get the contract for 70s. apiece."

England in manufactures. The actual importance of her mineral and manufacturing industry may be summed up as follows :—

	Operatives.	Product.
Textile Factories . . .	1,006,000	£190,000,000
Mines	475,000	66,000,000
Metals, Machinery, etc. .	530,000	100,000,000
Liquor	100,000	148,000,000
Sundries	819,000	161,000,000
	2,930,000	£665,000,000

"What are all the treasures of Potosi or Mexico," says Michel Chevalier, "compared with the magnitude or the beneficent effects of British manufactures? The New World sent to Europe in three centuries about £1,240,000,000 sterling of gold and silver, say £4,000,000 per annum. The cotton-factories of England produce twenty times as much yearly!" The following Table shows the growth of motive power in the mills of the United Kingdom :—

	Steam.	Water.	Total.
1838 . .	75,083 horse-power	27,900	102,983 horse-power
1861 . .	375,200 „	27,300	402,500 „
1876 . .	2,000,000 „	...	...

It would require 50 millions of workmen to supply the place of the above 200,000 steam-boilers.

Cottons.—As Spain ruined her industries by expelling the Moors and Jews, our country, on the other hand, owes some of its greatest manufactures to the generous asylum offered to foreigners. The first cotton-printer was a Frenchman who settled at Twickenham in 1676. The industry, however, attained no importance till the nineteenth century. The first shipment of cotton from the United States was in 1791, consisting of 91 tons. The marvellous growth of the cotton-trade is fully described elsewhere (page 495), for cotton now holds the foremost place in the manufactures of

the world. During the last fifty years other countries have begun to rival the United States as cotton-growers, as appears from the following Table of our imports of raw cotton :—

	1835-37.		1875-78.	
From United States	300,000,000	lbs. per an.	850,000,000	lbs. per an.
„ India . .	50,000,000	„	350,000,000	„
„ Brazil . .	25,000,000	„	100,000,000	„
„ Egypt, Turkey, etc. . .	10,000,000	„	200,000,000	„
	385,000,000	„	1,500,000,000	„

The actual consumption does not exceed 1300 million lbs., worth £34,000,000 sterling; and the value of manufactured goods averaged for many years £100,000,000, but is now nearly 10 per cent less. Cartwright's and Arkwright's[1] inventions were of the highest importance in the cotton and woollen manufactures at the beginning of the century. A mule-frame (says Yeats) that used to work twenty spindles now works 3000, and each spindle produces fifty times as much as in 1820. The quantity of fabric turned out daily from the mills exceeds 8000 miles of cotton cloth. The mills contain 39½ million spindles, and employ 480,000 operatives. Other countries vainly compete with us in this industry, our operatives being much more skilful. The average number of spindles to each workman is eighty-three in England, and from forty-six downwards on the Continent.

Woollens.—Until the nineteenth century this was the principal industry of our mills. In 1801 the total manufactures of Great Britain were valued at £60,000,000, of

[1] Both were ultimately rewarded for their inventions. Mr. Arkwright was knighted; the Rev. Mr. Cartwright received a grant of £10,000.

which woollens represented more than one-fourth. Since then the production has quadrupled :—

1801	£17,400,000
1850	31,200,000
1876	67,000,000

The mills count more than 5 million spindles, and 279,000 operatives. The consumption of wool is about 380 million lbs., including 220 million imported from Australia and South Africa, the imports of wool having trebled in the last twenty years. The absurd law of the Commonwealth[1] against exporting English wool was not repealed till 1825. So far from the ruin of the trade ensuing, as predicted, the export of English woollen goods rose 50 per cent in nine years (1834), owing to the improvements borrowed from the French. The clip in England is now 20 per cent more than fifty years ago. We consume in our mills one-fourth the clip of the world.

Linens.—Down to 1830 the British Government paid a subsidy of about £300,000 annually to the linen manufacturers of Ireland, being equivalent to 15 per cent of the value of linen produced, by which means Irish manufacturers were enabled to sell their linen to people of various countries for less than the cost of production. So absurd a system was invented by William III. to compensate Ireland for the laws that he was compelled to pass to shut up the woollen factories in that country at the request of English manufacturers. Upon the suppression of the protective "bounties" or subsidy in 1830 the linen trade by no means collapsed, but assumed greater dimensions, the manufacturers being compelled to introduce many improvements, before disregarded, and to produce the linen with a due consideration for economy.

[1] Passed a year after Cromwell's death.

Annual Exports.	
1820 to 1823 . .	46 million yards.
1830 to 1833 . .	61 . „

At the beginning of the century the Irish mills turned out linen to the value of £2,500,000 or £3,000,000 sterling per annum, including 40,000,000 yards for exportation, chiefly to England. Subsequently mills were erected in England and Scotland, with such success that in 1832 Dundee exported more linen than the whole of Ireland. The trade returns of Dundee for that year showed a consumption of 15,000 tons of flax, and a production of 50,000,000 yards of linen. The growth of the linen trade since 1830-32 is shown as follows:—

	1830-32. Average.	1875-78. Average.
Exports . . .	61,000,000 yards.	300,000,000 yards.
Value of manufactures	£7,000,000	£22,000,000
„ exports .	2,500,000	11,000,000
Operatives employed	172,000	144,000

Thus we are able with improved machinery to produce three times as much linen fabrics as fifty years ago, employing a smaller number of operatives. The mills contain 1,500,000 spindles. As the flax grown in Ireland is barely one-fifth of the required quantity, Great Britain pays £6,000,000 yearly for imported fibre, two-thirds being obtained from Russia; the annual imports from all countries averaging 110,000 tons. The mills consume 136,000 tons per annum, worth £7,000,000 sterling.

Silk.—In 1824 was repealed the law of Henry VII. against importing French silks. The manufacture rose steadily in value until 1860, from which date it has declined, but the quantity of goods manufactured has not fallen off in like manner.

	Imports of raw silk.	Value of manufactures.
1840 .	5,000,000 lbs.	£9,000,000
1860 .	9,500,000 ,,	10,500,000
1870 .	10,000,000 ,,	9,500,000

More than half the raw silk imported is afterwards exported to the Continent. The mills have 12,400 steam-looms and 1,130,000 spindles, worked by 48,000 operatives. In 1835 Porter found that the consumption of silk manufactures was 8s. per inhabitant in England, and 8d. per head in France. At present it averages 12s. in the United Kingdom, between home-made and imported fabrics. This industry came into England, as is supposed, with some French prisoners after the battle of Crecy. An effort was made in the last century to turn Chelsea Hospital into an establishment for growing silkworms, which failed: the climate proved fatal to a similar attempt at Cork, in 1835, when the surviving worms were removed to Malta.

Hardware.—There are 530,000 operatives engaged in hardware, cutlery, and the manufacture of machinery. The raw material is valued at £20,000,000, and the manufactured goods reach £100,000,000, of which one-third is exported, the rest being kept for home consumption. Until recently the hardware industry of Great Britain was equal to that of all the rest of the world put together. Although no longer without a rival, she is still far ahead of all competitors. It was supposed that the invention of Bessemer steel would be almost fatal to our trade, but the returns for 1877 show that out of 94 Bessemer factories in the world, there are 21 in Great Britain.[1]

Such has been the progress of steel, cutlery, and all

[1] Before Bessemer's invention the annual production of steel in Great Britain was only 51,000 tons: in 1873 it rose to 480,000 tons.

species of hardware[1] manufactures, that Sheffield and Birmingham have quadrupled their population in a lifetime—

	1811.	1880.
Sheffield . .	53,000	284,000
Birmingham . .	86,000	380,000

The export of hardware and machinery has risen as follows:—

1820 . .	£1,920,000
1840 . .	3,793,000
1878 . .	37,200,000

The iron consumed in our manufactures is about 2,500,000 tons, or less than half the quantity we produce, the rest being exported. We also use about 30,000 tons of superior Swedish iron, and an equal quantity from Biscay, especially suited for steel. Our copper manufactures consume £4,500,000 sterling of this metal, which is imported from Chile and United States. Our tin factories require 15,000 tons, worth £3,000,000 sterling, two-thirds of which is imported from Australia, East Indies, or Prussia. The total value of hardware manufactures in 1801 was £16,500,000; it follows, therefore, that the industry has multiplied six-fold.

It appears that the total manufactures of the kingdom amount to £665,000,000, the work of 2,930,000 operatives, say £224 per head. Deducting the exports, the balance for home consumption is about £460,000,000, or £14 per inhabitant.

The above, of course, includes minerals, which may nevertheless be considered at greater length in a distinct chapter.

[1] The manufacture of pins averages 50,000,000 daily, or nearly three times the quantity produced in 1840.

Minerals of Great Britain.

The value of coal and iron extracted from the mines of Great Britain in twenty-five years (1854-1879) has been £1,076,000,000, or nearly equivalent to the yield of the gold and silver mines of Spanish America in three centuries. The development of our mineral resources has been as follows:—

	1800-1805.	1835 to 1840.	1875 to 1879.	
Coal . . .	£3,000,000	£10,000,000	£47,000,000	per ann.
Iron . . .	2,000,000	7,000,000	16,000,000	,,
Copper, tin, salt, etc.	1,000,000	3,000,000	3,000,000	,,
Total . .	£6,000,000	£20,000,000	£66,000,000	

Coal.—The production has increased thirteen-fold, more than keeping pace with our manufactures, which have grown eleven-fold since the beginning of the century. The output in 1801 to 1805 averaged 10,000,000 tons, of which one-fourth was shipped at Newcastle and Sunderland, the rest conveyed inland. The duty of 75 per cent imposed by William III. on coal, even for consumption in England, was such an obstacle to the manufacturing and general industry of the kingdom, that it was abolished in 1830. This caused the price in London to fall from 50s. to 17s. per ton, whereupon the consumption rose rapidly. At the same time the invention of steamboats and railways increased the demand, and in 1853 the output reached 54,000,000 tons. As foreign countries constructed railways, the exportation of English coal increased year by year, while the onward march of British manufactures gave equal impetus to the home consumption. At present the annual demand reaches 135,000,000 tons, viz.—

British factories	46,000,000 tons.
Railways and steamers . . .	25,000,000 ,,
Gas and water companies . . .	14,000,000 ,,
Domestic use	30,000,000 ,,
Exportation	20,000,000 ,,
	135,000,000 ,,

Great Britain raises one-half the coal consumed in the whole world. It has been supposed that our coal-fields will hardly last more than 200 years longer, but the result of the Parliamentary inquiry rather indicated a sufficient supply for six centuries to come. A new coal-field of Durham is now worked some miles under the sea. Moreover, electricity has begun to supplant coal-gas, and also to take the place of steam[1] as a motive power, which will reduce the demand upon our coal-fields.

Iron.—In the earlier part of the century (1801-1805) we imported 20 per cent more iron than we exported. The invention of Neilson's hot-blast, in 1828, gave an extraordinary impulse to the industry, by cheapening the production of pig-iron from ore. Previous to that time it required four tons coal for a ton of pig-iron; but this was reduced by Neilson almost one-half, and subsequent improvements have caused a still greater economy of fuel. The iron ore of England gives about 40 per cent metal—that is, 2½ tons ore equal to 1 ton pig-iron. The relation which Great Britain bears to the world is as follows:—

	Ore.	Pig-iron.
Great Britain . .	16 million tons	6½ million tons
Rest of world . .	22 ,,	8½ ,,
	38	15 ,,

The production of pig-iron in Great Britain has grown as follows:—

[1] See page 78.

1802 . . .	227,000 tons.
1848 . . .	1,998,000 „
1877 . . .	6,608,000 „

This enormous increase was chiefly due to the construction of 150,000 miles of railway, in all parts of the world. It was also, in some measure, caused by the building of steamers and sailing vessels of iron instead of wood. The annual consumption of iron in the United Kingdom is much greater per inhabitant than in any other country (see page 69). The weight of coal and iron annually exported by Great Britain is over twenty million tons—enough to freight all the vessels in the world.

Copper, Lead, Tin.—These minerals are of secondary importance, and their annual production may be briefly noticed as follows:—

	1801-1806. Annual average.	1877-1878. Annual average.
Copper . .	£600,000	£340,000
Tin . .	300,000	700,000
Salt . .	100,000	1,500,000
Lead, silver, etc.	500,000	2,460,000
	£1,500,000	£5,000,000

Previous to 1823 salt was subject to a duty thirty times its own value. Since the repeal of the duty the production has increased tenfold, being now close on three million tons.

The average output of miners is increasing, as shown thus:—

	Mineral extracted.	Miners.	Per head.
1876 . .	149 million tons	515,000	290 tons.
1878 . .	146 „ „	475,000	307 „

The above includes not only coal and iron, but all other minerals.

Railways and Canals.

The first Railway Bill passed by Parliament was for a

line from Wandsworth to Croydon, in 1801; but a quarter of a century elapsed before the first line was actually constructed for carrying passengers between Stockton and Darlington. People still living can remember the mail-coaches that plied once a month between Edinburgh and London, making the journey in twelve or fourteen days. The *Annual Register* of 1820 boasts that "English mail-coaches run 7 miles an hour; French only 4½ miles; the former travelling, in the year, forty times the length of miles that the French accomplish." These coaches were a great improvement on the previous method of sending the mails,[1] and were even preferable to "the canal fly-boats."

Canals were very popular at the beginning of the century. We read of six times the required capital having been subscribed for two or three enterprises of this kind. Freight was so dear by the old system of waggons, that canals came to be regarded as boons to commerce. Thus, a ton of merchandise from Liverpool to Manchester used to cost forty shillings by waggon; but when the Duke of Bridgewater built his canal,[2] he charged only six shillings a ton for freight between those places. So rapidly were canals introduced, that at the time when Huskisson inaugurated the railway from Liverpool to Manchester, there were 4000 miles of canals and canalised rivers, representing an outlay of £30,000,000. The ordinary freight was 4d. a mile per ton; from London to Birmingham, 113 miles, 40s.; from London to Manchester, 200 miles, 70s. The annual traffic on all the canals reached 20 million tons, or

[1] In 1783 a petition to Parliament stated that "the mails are generally entrusted to some idle boy, without character, mounted on a worn-out hack."

[2] Previous to the opening of the Bridgewater Canal, the Manchester merchants lived on oatmeal.—(*Smiles.*)

as much as our railways now carry in a month. When railways were proposed, the advantages over the mail-coaches and canals were not at first perceived; but at present it is easy to compare them.

	Before railways.	Since railways.
Passengers (1st class) .	8d. a mile.	3d. a mile.
Merchandise, per ton .	4d. „	1d. „
Speed of travel . .	100 miles per day.	100 miles in two hours.

Railways have almost trebled their length of miles since 1850, and the principal features of traffic may be compared as follows:—

	1850.	1878.
Miles open . .	6,620	17,333
Cost of construction	£240,000,000	£698,500,000
No. of passengers .	72,000,000	565,000,000[1]
Receipts . . .	£13,500,000	£62,863,000
Net earnings . .	£1020 per mile.	£1712 per mile.
Profit on capital .	3 per cent.	4¼ per cent.

The number of passengers killed per million declined steadily during thirty years until 1873, from which time it has risen rapidly; the ratio for six years, ending December 1879, was exactly double that of three years preceding, namely 1871-72-73. Nevertheless our ratio is lower than that of all other countries except Germany, and shows as follows for the last thirty-three years:—

	Ratio of deaths.	Passengers, per annum.
1847-49 . . .	1 in 4,782,000	58 millions.
1856-59 . . .	1 in 8,708,000	139 „
1866-69 . . .	1 in 12,941,000	295 „
1871-73 . . .	1 in 20,083,000	418 „
1874-78 . . .	1 in 11,688,000	525 „
1879	1 in 5,350,000	621 „

The various railways in the United Kingdom employ an army of 276,000 men, and no fewer than 176 railway directors have seats in Parliament. Besides the railways

[1] Not including holders of season tickets.

there are 127,000 miles of excellent highroads, the maintenance of which costs £1,500,000 sterling per annum. Yet it is barely one hundred years since Arthur Young described the turnpike road between Preston and Wigan as follows:—"This infernal road is to be avoided as the devil. I have measured ruts four feet deep. In some places loose stones are thrown in as if for repairs, and in eighteen miles I counted three carts broken down." And even so recently as 1837 the total number of mail-coaches was as follows:—

England and Wales . . .	103
Ireland	30
Scotland	10
	143

Of this number 27 left London every night at 8 o'clock to travel a total of 5500 miles to their destination. In 1834 Mr. Porter ascertained that 82,000 persons travelled daily in Great Britain, an average of 12 miles, at a cost of 5 shillings. In 1873 there were 1,500,000 passengers daily, averaging 8½ miles, at a cost of 13 pence. So tedious and expensive was travelling at the close of the eighteenth century, that a post-chaise for a family of four persons usually took four days from London to Holyhead, and the cost of the journey was £75 sterling. In Scotland there were few roads or bridges till Mr. Telford took them in hand, constructing 1200 bridges and 900 miles of highway, between the years 1800 and 1820.

Commerce.

At the period when our grandfathers spent £831,000,000 to overthrow Buonaparte the commerce of the British Empire did not exceed £60,000,000. At present it reaches

£966,000,000, showing that it doubles every twenty years. This includes the trade of the Colonies, being made up thus :—

	Imports.	Exports.	Total.
United Kingdom .	£367,000,000	£234,000,000	£601,000,000
Colonies . . .	150,000,000	170,000,000	320,000,000
	£517,000,000	£404,000,000	£921,000,000

The above sums are equal to 35 per cent of the imports, and 30 per cent of the exports of the world. If we set aside the Colonies and consider only the United Kingdom, it will be seen that our imports are 50 per cent over our exports.

The growth of trade in the last sixty-three years has been as follows :—

	Imports.	Exports.	Total.
1816-1820 .	£32,000,000 p. ann.	£51,000,000 p. ann.	£84,000,000
1821-1830 .	40,000,000 ,,	46,000,000 ,,	86,000,000
1831-1840 .	54,000,000 ,,	57,000,000 ,,	111,000,000
1841-1850 .	83,000,000 ,,	75,000,000 ,,	158,000,000
1851-1860 .	153,000,000 ,,	121,000,000 ,,	274,000,000
1861-1870 .	270,000,000 ,,	213,000,000 ,,	483,000,000
1871-1878 .	367,000,000 ,,	279,000,000 ,,	646,000,000
Average 63 years	£144,000,000 ,,	£121,000,000 ,,	£265,000,000

The balance against the United Kingdom has been £1,449,000,000, say £23,000,000 per annum. It must, however, be noted that down to 1840 the exports exceeded imports, so that the balance against us is not quite forty years' growth, and has therefore averaged nearly £40,000,000 per annum, increasing in the following manner :—

	Surplus imports.	Ratio over exports.
1841-1850 . . .	£8,000,000	11 per cent
1851-1860 . . .	32,000,000	26 ,,
1861-1870 . . .	57,000,000	27 ,,
1871-1878 . . .	88,000,000	31½ ,,

The balance of trade for the last three years has been still more unfavourable than shown above, since we find (1876-77-78) that imports averaged £378,000,000, and exports only £248,000,000, the former being, therefore, 53 per cent over the latter.

The current of specie for the last sixteen years has been as follows:—

	Imported.	Exported.	Surplus.	Ratio of imported and exported.
1863-66	£28,377,000 per an.	£21,605,000	£6,772,000	100 to 75
1867-70	24,658,000 „	17,460,000	7,198,000	100 to 70
1871-74	32,981,000 „	28,962,000	4,019,000	100 to 87
1875-78	34,973,000 „	30,894,000	4,079,000	100 to 88
Average	30,251,000 „	24,750,000	5,501,000	100 to 82

This shows an influx of £88,000,000 in the last sixteen years, although the balance of trade was so heavily against us.

1863-1878.	
Imports of merchandise (16 years)	£5,144,000,000
Exports of do. „	4,036,000,000
Balance against Great Britain	£1,108,000,000

There are but three countries that send us more specie than we send them in return, the average for sixteen years showing as follows:—

	Imports from.	Exports to.	Difference.
United States	£8,096,000	£710,000	£7,386,000 imports
Spanish America	6,690,000	1,340,000	5,350,000 „
Australia	6,185,000	35,000	6,150,000 „
France	2,494,000	6,434,000	3,940,000 exports
Germany	2,320,000	3,650,000	1,330,000 „
Egypt and India	1,436,000	7,050,000	5,614,000 „
Belgium and Holland	850,000	2,060,000	1,210,000 „
Spain and Portugal	240,000	1,790,000	1,550,000 „
Other Countries	1,939,000	1,731,000	208,000 imports
	£30,250,000	£24,800,000	£5,450,000 „

Taking the various countries as they stand upon our trade-list, we find that the British Colonies hold the first place, and our commerce with them is increasing more rapidly than with the rest of the world in general:—

	1868.	1878.	Increase.
Trade with Colonies .	£114,000,000	£163,000,000	43 per cent
With foreign countries	408,000,000	484,000,000	19 „
	£522,000,000	£647,000,000	24

Whether owing to the amount of British capital invested in the Colonies, or from whatever cause, it is remarkable that we receive from them 50 per cent over the value of our exports thither.

Our second customer is the United States, with which country our relations have grown, during the last ten years, even in greater ratio than with our Colonies, and four times more than with other foreign countries, viz.—

	1868.	1878.	Increase.
United States . .	£64,000,000	£93,000,000	45 per cent
Other Countries .	344,000,000	391,000,000	13½ „
	£408,000,000	£484,000,000	23 „

The balance of trade for ten years shows a sum of £394,000,000 against Great Britain and in favour of the United States, which is by some supposed to be met by shipment of United States bonds heretofore held in England. Meantime the imports of precious metals from the United States, as we have seen, average annually £7,000,000 sterling more than we send thither. The United States blue-books indicate how much the Americans prefer trading with Great Britain rather than with other countries:—

	1821.	1869.	1877.
Trade with England . .	34 per cent	40 per cent	42 per cent
„ „ Other Countries	66 „	60 „	58 „
	100 „	100 „	100 „

In fact, American commerce is gradually leaving other channels to flow in increased volume towards the mother-country.

France occupies the third place, our trade with that country taking prodigious development after the Cobden treaty of 1864; imports have increased 400, and exports 150 per cent in twenty-two years. The balance of trade averages £30,000,000 a year against us, yet the outflow of bullion is under four millions per annum. As an instance of the increasing relations with Great Britain, the French blue-books give the following:—

	1868.	1877.
Trade with Great Britain . .	14 per cent	21 per cent
„ „ Other Countries . .	86 „	79 „
	100 „	100 „

The inference in this case is the same as in the United States, namely that the French people find it better to deal with the English than with other nations.

Fourth on our list stand the Low Countries (Holland and Belgium) whose trade with Great Britain has increased 42 per cent in the last ten years. Our imports from the Low Countries are double our exports thither, but we only send them £1,250,000 in precious metal to pay the difference.

Germany is our fifth customer, and her dealings with us have grown 28 per cent in the last seven years. Although the balance of trade during that period averaged £10,000,000 yearly against us, the current of bullion from England to Germany is under £1,500,000.

Spanish America comes next, including the sixteen Republics from Mexico to Cape Horn, and the Empire of Brazil. Ten years ago our trade with that part of the world was 24 per cent more than it is at present. The decline is readily accounted for by the fact that ten of the Republics

suspended payment, four compounded with their creditors, and only two[1] honourably met their engagements.

Russia holds seventh place, and our relations with her are also on the decline, having fallen 10 per cent in seven years. Our imports from Russia average three times the annual value of our exports thither, yet we send back only £1,000,000 per annum in bullion to cover the deficit.

Our trade with China is almost equal to that with Russia, and is remarkable for absorbing much silver.

Spain and Portugal occupy the ninth place among our customers, and our trade with the Peninsula has grown 50 per cent since 1868. The balance of trade is against us as five to two, and those countries take from us in specie £1,500,000 per annum.

The Scandinavian kingdoms of Denmark, Sweden, and Norway have trebled their trade with us since 1861, imports from those countries being double the amount of our exports to them.

Turkey and Egypt used to hold the seventh rank, but have now descended to the eleventh, the trade with them having fallen 35 per cent in twelve years.

Italy is our twelfth customer, and stands for 2 per cent of our trade. It is the only country with which we deal that shows a balance of trade in favour of Great Britain.

The above twelve countries make up 91 per cent of our trade, the remaining 9 per cent being shared among a number of insignificant States.

The average trade in 1876-77-78 is summed up thus:—

	Imports.		Exports.
Articles of food	£153,000,000	Textile fabrics . . .	£121,000,000
Cotton and wool	58,000,000	Hardware and machinery	33,000,000
Sundries . . .	167,000,000	Sundries	94,000,000
	£378,000,000		£248,000,000

[1] Chile and the Argentine Republic.

We import 540,000 tons of cotton, at a cost of £34,000,000 sterling, two-thirds from the United States, the rest from India, Egypt, and Brazil (see page 145); also 160,000 tons wool, worth £24,000,000 sterling, chiefly from the Cape and Australian colonies. The increase in the principal items of our import trade has been as follows:—

	1829-1831.		1877-1878.	
Grain, meat, butter	£3,000,000	per annum	£101,000,000	per annum
Cotton and wool	9,000,000	„	58,000,000	„
Sugar, tea, coffee	13,000,000	„	44,000,000	„
Silks and raw silk	2,000,000	„	17,000,000	„
Wine	2,000,000	„	9,000,000	„
Timber and metals	1,500,000	„	28,000,000	„
Hides and tallow	2,000,000	„	8,000,000	„
Sundries	13,500,000	„	113,000,000	„
	£46,000,000	„	£378,000,000	„

The exports have been alluded to in the chapter on Manufactures.

Shipping.

The number of vessels carrying the British flag is greater than that of any other nation in ancient or modern times, and the tonnage of our merchant navy has grown as follows:—

	United Kingdom.	Colonies.	Total.
1810	2,211,000 tons	215,000 tons	2,426,000 tons
1830	2,201,000 „	330,000 „	2,532,000 „
1850	3,565,000 „	668,000 „	4,332,000 „
1870	5,691,000 „	1,458,000 „	7,149,000 „
1877	6,399,000 „	1,735,000 „	8,134,000 „

During forty years of the Navigation Laws our shipping increased 49,000 tons per annum; in twenty-nine years since the repeal of those laws the increase has been 131,000 tons yearly. The shipping of our Colonies is growing faster than that of the United Kingdom, the ratio showing thus:—

	United Kingdom.	Colonial.	Total.
1820 . .	91 per cent	9 per cent	100 per cent
1840 . .	82 „	18 „	100 „
1870 . .	80 „	20 „	100 „
1877 . .	78 „	22 „	100 „

The proportion of steamers is growing so rapidly that before long sailing-vessels will fall into an insignificant minority:—

	Tonnage of steamers.	Ratio to total shipping.
1849 . . .	177,300	4 per cent
1864 . . .	770,000	11 „
1877 . . .	2,293,000	28 „

The Colonies show a greater increase of sailing-vessels than steamers. In 1860 they owned 10 per cent of all the British steamers afloat, in 1870 only 8 per cent, and at present barely 7 per cent.

Forty years ago our merchant vessels[1] were much smaller than at present, and the tendency is every year to increase their size.

	Steamers.	Sailing vessels.	General.
1840 . .	118 tons each	172 tons.	170 tons
1861 . .	442 „	202 „	218 „
1878 . .	1,020 „	287 „	390 „

By increasing the size of our vessels we have effected a saving of 123,000 seamen, as compared with the former number of hands to tonnage.

	Shipping.	Sailors.	Tons per man.
1849 . . .	3,096,000	153,000	20
1861 . . .	4,360,000	172,000	25
1877 . . .	6,399,000	197,000	32

According to the scale of 1849 we should require 320,000 seamen to man our present amount of shipping. The saving is therefore equivalent to 38 per cent, which allows a consequent reduction of freight charges, enabling

[1] This applies to the United Kingdom, the Colonies not being included in the computation.

us to import our food and raw materials more profitably, and to export our manufactures to greater advantage. The Colonies employ a larger number of hands per ton than we do.

	British.	Colonial.	Total.
Tonnage . .	6,399,000	1,735,000	8,134,000
Seamen . .	197,000	156,000	353,000
Average .	32 tons per man.	11½ tons.	23 tons.

The proportion of trade done all over the world in British vessels is shown as follows:—

	Tons.	Ratio of total.
United Kingdom . .	55,120,000	88 per cent
United States . . .	7,434,000	59 ,,
Canada	5,673,000	80 ,,
Australia	4,492,000	93 ,,
France	5,254,000	36 ,,
Germany	2,298,000	36 ,,
Low Countries . . .	3,790,000	51 ,,
Italy	1,887,000	23 ,,
Russia	1,006,000	34 ,,
West Indies . . .	1,180,000	60 ,,
South Africa . . .	1,004,000	86 ,,
South America . . .	1,200,000	50 ,,

This makes up a total of 90,000,000 tons, equal to eleven voyages of all the British merchant navy. The total may be dissected thus:—

British coasting trade . . .	37,000,000 tons
,, foreign ,, . . .	26,000,000 ,,
Trading in foreign waters . .	27,000,000 ,,
Total carrying trade . .	90,000,000 ,,

At 10s. per ton this represents an income of £45,000,000 per annum, that is £34,000,000 for the United Kingdom, and £11,000,000 for the Colonies. During the last ten years no fewer than 4176 steamers have been built in the United Kingdom, chiefly on the Clyde, at prices ranging

from £16 to £30 per ton. There is also a number of iron sailing-vessels built for British or foreign owners. The total of vessels and steamers launched sometimes reaches 600,000 tons per annum, but in 1878 it did not exceed 428,000 tons.[1] The cost of building iron vessels may now be taken at £13 per ton register, or £16 for steamers, with machinery and all complete. Not only is the cost of building less than before, but new methods have led to great economy of fuel: in 1850 the ocean steamers consumed usually 130 tons coal in twenty-four hours; at present the average is but 90 tons.

The arrivals in British ports have multiplied ten-fold since 1820, but it is remarkable that in these returns we find an increase twenty-fold for foreign vessels, and only eight-fold for British.

	British.	Foreign.	Total.	Ratio of British.
1820	2,270,000 tons	408,000 tons	2,678,000	85 per cent
1840	3,197,000 ,,	1,460,000 ,,	4,657,000	70 ,,
1860	6,889,000 ,,	5,284,000 ,,	12,173,000	58 ,,
1877	17,383,000 ,,	8,382,000 ,,	25,765,000	68 ,,

Since 1820 it appears that our shipbuilders have not kept pace with the growth of our commerce, as the proportion done on British bottom is one-fifth less than sixty years ago. The above returns, of course, do not include the coasting trade, which exceeds that of the high seas by 40 per cent, viz.—

Arrivals from abroad .	26,000,000 tons
,, coasting . .	36,500,000 ,,
Total .	62,500,000 ,,

The increase of tonnage (high seas and coasting) has been as follows :—

[1] Built in United Kingdom 1089 vessels of 428,000 tons, average 400 tons.

	Arrivals.
1816 . .	2,000,000 tons
1840 . .	9,500,000 ,,
1878 . .	62,500,000 ,,

The entries for 1877 were made up thus:—

	Vessels.	Tons.	Average size.
London . .	47,688	9,601,000	202 tons
Liverpool .	14,885	6,624,000	440 ,,
Tyne ports .	15,858	4,911,000	303 ,,
Clyde ports .	13,017	3,332,000	260 ,,
Dublin . .	8,739	2,331,000	255 ,,
Belfast . .	9,560	1,824,000	188 ,,
Southampton .	8,136	1,313,000	165 ,,
Other ports .	222,435	32,574,000	145 ,,
	340,318	62,510,000	185 ,,

The total of entries tonnage showed 85 per cent British and 15 per cent foreign. The ratio for population was as 2 tons per inhabitant in England, 2½ in Scotland, and 1¼ ton in Ireland.

One thousand vessels with 180,000 tons enter, and as many leave, the ports of the United Kingdom daily.

A small fleet of 32,000 boats is employed in British fisheries, manned by 167,000 fishermen, of whom one-half are Scotch. The Lifeboat Association, founded in 1824, has now 269 boats at the most exposed points of our coasts, forming a belt of 5000 miles; they are manned by 12,000 seamen, all volunteers except the coxswain, who receives £8 a year for keeping the boat. They save about 900 lives annually, having rescued no fewer than 26,906 persons between 1824 and 1879. The income of the Society was £300 in 1848, and is now £40,000 per annum: its boats, etc., represent a value of £300,000, the Society being entirely supported by private donations. The utility of such a society is shown by having saved so many

lives, and thus diminished by one-half the disasters of the last fifty years.[1]

The sum paid by underwriters in Great Britain averages £1,500,000 per annum, being about £6 per ton on vessels, and £8 per ton on cargoes. The amount of marine insurance is seldom below £450,000,000 sterling.

Instruction.

At the beginning of the century Great Britain was much behind Germany and the United States in popular education. Scotland led the way for enlightenment, and at present the United Kingdom is amongst the foremost countries in the ratio of school children to population. The upward march of the public schools is shown as follows:—

	School children.	Expenditure.
1835-40 . .	462,000	£169,000 per annum
1860-65 . .	1,058,000	1,340,000 „
1878 . .	3,468,300	5,290,000 „

The above does not include the children attending private schools, or the youths at colleges and universities: these are supposed to number close on 1,500,000, making a grand total of 5,000,000 school population, or 15 per cent of the total number of inhabitants. The system of National Schools was introduced by Bell and Lancaster about sixty years ago, and when Dr. Bell died, in 1832, he left £120,000 to further the great purpose of his life. The necessity for educating the masses was, however, not only unfelt but stoutly denied by many. At last people began to see the close connection between ignorance and crime. In 1838 Judge Coleridge called attention to the fact, and this was soon afterwards confirmed by the Com-

[1] In the interval between 1854 and 1878 there were 46,000 vessels wrecked in British waters, and 17,000 lives lost.

mittee of the House of Commons in its report, "We find that the neglect of education causes much crime and expenditure that might be avoided." Between 1833 and 1861 the number of school children rose 147 per cent, while the population had only increased 40 per cent. The subjoined Table shows the direct influence of public schools in reducing the ratio of crime.

	1830-40.	1870-77.
School children .	1 in 57	1 in 9 inhabitants
Convictions . .	1 in 780	1 in 1880 ,,

The degree of instruction varies greatly in the three kingdoms, Scotland being much in advance:—

	Ratio of school children.	Adults who can write.
England . .	11 per cent	77 per cent
Scotland . .	11 ,,	85 ,,
Ireland . .	7 ,,	66 ,,

As the attendance at private schools (not included above) is probably larger in Ireland than it is in England and Scotland, the ratio of school children is doubtless more equal than the above Table would indicate. The ratio of adults who can write is taken from the marriage registers, the males being about 10 per cent higher than the females. The improvement in the returns of the marriage-register (England and Wales) is shown as follows:—

	Can write.	Cannot write.
1800 . .	53 per cent	47 per cent
1840 . .	58 ,,	42 ,,
1870 . .	77 ,,	23 ,,

Public libraries have greatly diffused the benefits of instruction among all classes, the number of these institutions increasing as follows:—

	Libraries.	Volumes.	Readers.
1848 . . .	28	1,542,000	360,000
1876 . . .	153	3,613,000	7,650,000

In this matter of public libraries we cannot yet show as high a ratio for population as in France, Italy, or Germany, much less the United States; but we are making rapid progress. Besides, it must be remembered that the libraries of the principal clubs are not included above, and the number of private libraries is larger in England than in most countries.

The number of learned societies has grown in half a century as follows:—

	1803.	1830.	1850.
English . . .	6	28	74
Scotch . . .	8	14	26
Irish	2	5	18
	16	47	118

The total number of members cannot fall short of 60,000; it appeared in 1850 that nine of the principal associations counted between them 16,300 fellows, and had an income of £44,000 per annum.

The press has been even more active than the schools in promoting education, especially since the abolition of the paper-duties. So enormous were these duties that Mr. George Knight stated they amounted to £20,000 on his *Penny Encyclopædia*. At present the circulation of the penny daily papers amounts, in London alone, to about a million copies. The weekly papers have increased so wonderfully, that one of them prints over half a million, or about 30 millions per annum, whereas in 1821 the presses of the United Kingdom only produced 24 million papers in the year. The monthly reviews issue about 200,000 copies, say 2,500,000 yearly.

The average of new books issued in 1876-78 was 2970, and the public taste was expressed in the following manner:—

Rising.	Declining.
Political Economy.	Poetry and Drama.
Law and Medicine.	Novels and Romances.
Juvenile and Educational.	Travels and Adventures.

On the whole there seemed a lull of talents, as booksellers dealt mostly in reprints of old authors.

CHARITIES.

The amount annually expended for the poor and sick is over £19,000,000 sterling, of which about 50 per cent is obtained by local taxation, and 50 per cent by voluntary donations. The figures may be summed up thus :—

	No. relieved.	Cost.	Per head.
Poor-houses . . .	1,037,000	£9,425,000	£9
Hospitals, etc. . .	1,088,000	9,630,000	9
	2,125,000	£19,055,000	£9

The income is derived in the following manner :—

Local rates	£9,425,000
Endowments . . .	2,760,000
Bequests	600,000
Subscriptions and donations	6,400,000
	£19,185,000

The amount of subscriptions and donations varies, but it is ascertained that London charities alone receive £2,600,000 per annum[1] in this manner. The statement of charitable bequests since 1856, for England and Wales, makes up a sum of £7,793,000, or an average of £1000 per day for the last twenty-two years, and compares with the amount of property subject to legacy duty as follows :—

	Subject to legacy duty.	Charitable bequests.	Ratio per £100.
1856 to 1860 .	£49,840,000	£156,020	6 shillings
1861 to 1870 .	61,300,000	387,770	13 „
1871 to 1878 .	74,800,000	448,000	12 „

[1] Or £4,700,000 if charity schools be included.

If the bequests in the last eight years[1] show a lower ratio to wealth than in the previous decade, it must be observed that charitable donations and subscriptions have enormously increased, as shown by an increase of 90 per cent since 1861 in the hospitals and asylums supported by voluntary contributions. In 1877 there were 483 hospitals in the United Kingdom, which treated 131,000 patients: in 1800 there were but 51 hospitals in the three kingdoms. In the last twenty years the multiplication of public charities has far exceeded the growth of population:—

	1861.	1874.	Increase.
Hospitals and asylums . .	593	1132	90 per cent
No. of inmates . . .	69,550	110,800	60 „
Population of United Kingdom	28,974,000	32,426,000	12 „

Our hospitals are much better managed than they were in former times. Howard led the way to improvement by showing that the allowance for country infirmaries was only twopence per head daily, while rogues and vagabonds in jail were allowed threepence daily. The mortality returns, compared with the earlier parts of the century, or with those of the Continent, speak most favourably:—

		Died.	Discharged cured.
English hospitals	1790 to 1834 .	8½ per cent	91½ per cent
„ „	1870 to 1875 .	7½ „	92½ „
European „	1820 to 1850 .	13 „	87 „

There is a growing preference for small hospitals, as the death-rate is found to be the lowest, and to rise more than in proportion to the number of beds:—

	Patients relieved.	Death-rate.
Under 100 beds . . .	20,000	6½ per cent
From 100 to 200 . . .	47,000	7 „
Over 200	64,000	8 „
	131,000	7½ „

[1] The Charitable Commissioners in Ireland have an income of £260,000 per annum, not included above.

There is one physician for every twenty beds, and each bed receives usually nine patients annually: about one-fourth of the beds are always vacant. Some hospitals have double the death-rate of others, probably from the nature of illness,[1] for example :—

	Annual admission.	Death-rate.
London Fever Hospital	3000	15 per cent
St. Bartholomew's	5500	5 „
St. Thomas's	3200	12 „
Leicester Hospital	2000	4½ „
Edinburgh Infirmary	4500	10 „
Misericordia, Dublin	2100	6½ „

The general returns show that the death-rate in Scotland is 50 per cent more than in Ireland, which may be the effect of climate or local conditions :—

	Death-rate.
English hospitals	8 per cent
Scotch „	9½ „
Irish „	6½ „

The cost of each patient varies greatly; for example, it is £12 in St. Thomas's, and only £5 in Guy's. The average for the United Kingdom is 55s., each patient staying an average of thirty days, and costing 22 pence per day.

Besides the hospitals we have dispensaries giving advice and medicine gratis to 972,000 persons yearly in England and Wales (and probably 1,500,000 for the whole United Kingdom).[2] This class of relief is chiefly in the large cities, viz.—

Liverpool	159,000 persons
Manchester	94,000 „
Birmingham	81,000 „
Edinburgh	60,000 „
Glasgow	48,000 „

[1] The lying-in hospitals average 1 per cent mortality, and it is observed the rate among unmarried mothers is double that of the married.

[2] In Ireland there are 751 dispensaries supported at a cost of £150,000 per annum.

Lunatic asylums only forty years ago were conducted on such cruel methods that the death-rate was on a par with that of Sierra Leone, namely 24 per cent annually. As the insane now live much longer, the death-rate being only 13 per cent, the proportion to population has risen so notably as to cause some alarm. It must, however, be admitted that the increase arises also in part from the spread of drunkenness, as 15 per cent of the patients under treatment were, according to the Commissioners' Report for 1877, driven mad by habits of intoxication :—

12	per cent	among	educated lunatics
14	„	„	artisan „
17	„	„	farm labourer „

The returns of insane for 1876 compared with 1859 show as follows :—

	1859.	1876.
Ratio in England .	1 in 536 inhabitants	1 in 368 inhabitants
„ Scotland .	1 in 640 „	1 in 416 „
„ Ireland .	1 in 433 „	1 in 315 „

Insanity is supposed to arise in a great measure from drink in England, from intermarriage in Wales and Scotland, and from insufficient nitrogenous food in Ireland; but, of course, all these and other causes will be found in each of the three kingdoms. Women are usually 3 per cent more numerous than men, in the register of insanity, which is just the proportion of the sexes in our population, but in Ireland male lunatics are more numerous. It is stated that 40 per cent of the insane die of consumption, which would partly support the theory of insufficient nourishment being a predisposing cause. The number of recoveries averages 40 per cent of those admitted, the rate among females being higher.

Deaf and dumb persons, and blind, are less numerous in England than on the Continent, but Ireland and Scot-

land are not so favourably circumstanced, the returns showing :—

	Deaf and Dumb.	Blind.
England . .	1 in 1754 inhabitants	1 in 1055 inhabitants
Wales . . .	1 ,, 1542 ,,	,, ,,
Ireland . .	1 ,, 1380 ,,	1 in 894 ,,
Scotland . .	1 ,, 1340 ,,	1 ,, 1096 ,,

Overcrowding in large cities is supposed to have much influence in the number of these infirmities. One of the noblest purposes of charity, therefore, has been to improve the household dwellings of the working-classes, and rescue the families of artisans from damp cellars and pestilential "slums." The American philanthropist, George Peabody, gave £500,000, in 1868, to the City of London for the erection of suitable buildings, where 2200 workmen's families are comfortably lodged at four shillings per week. The annual death-rate in Peabody's buildings is only 19 per 1000, or 15 per cent below the London average.

City of London.

In the progress of the British Empire and of mankind London has played a prominent part. She is as great an actor in the drama of the nineteenth century as Rome was in the time of the Cæsars. Her legions of engineers, merchants, and explorers, have opened up so many new fields for enterprise, that there is scarcely a habitable part of the globe that is not connected with London as the centre of the world's commerce.

Even at the beginning of the century there were indications of a rapidly increasing importance, but the growth of trade and population in recent years surpasses anything in history, and leaves the rest of the United Kingdom far behind.

The increase of population has been as follows :—

	Population.	Ratio of United Kingdom.
1801 . . .	864,845	5 per cent
1829 . . .	1,468,400	6 ,,
1840 . . .	2,030,000	7½ ,,
1879 . . .	4,714,000	14 ,,

It is a remarkable fact that Sir William Petty predicted two centuries ago that the population of London would reach 5,000,000 about the year 1842. At present it contains more or less the same population as any of the following countries :—Portugal, Ireland, Sweden, Bavaria, Belgium, Canada; or twice that of Switzerland, Saxony, Peru, Chile, or Australia.

Its inhabitants consume 580,000 cattle, 3,500,000 sheep, 28,000 tons butter, 34,000 tons cheese, 42,000,000 bushels grain, 180,000 pipes wine, 5,000,000 gallons spirits, 6,000,000 barrels beer, and 6,500,000 tons coal, per annum.

The Customs returns for 1801 showed the tonnage of the port as follows :—

Arrivals, British . .	418,000 tons
,, Foreign . . .	453,000 ,,
Total . .	871,000 ,,

At present the docks have an area of 695 acres, and admit 7000 vessels per annum. Between foreign and coasting trade London receives yearly 9,000,000 tons of shipping.

Sanitary improvements have reduced the death-rate in the following degree :—

	Annual Death-rate.
1840 to 1845 . .	245 per 10,000
1874 to 1878 . .	228 ,,

The difference amounts to a saving of 12,200 lives per annum.

The gas and water companies represent an aggregate capital of £20,000,000, on which they make the citizens pay a net return of £1,630,000 per annum, or 8 per cent.[1] The first water-supply was devised by a Dutchman, who put up a wheel on London Bridge and pumped the water into the houses in 1594. Twenty years later Sir Hugh Myddelton drew a supply from the New River, at a cost of £17,000, and one of the New River shares was sold only six years ago for £50,000.

The water-supply compares with that of other cities as follows:—

	Gallons daily.	Per inhab.	Cost of works.	Per inhab.
London . .	121,000,000	28 gallons	£8,888,000	44s.
New York . .	48,000,000	48 ,,	2,500,000	50s.
Paris . . .	34,000,000	16 ,,	2,100,000	40s.
Glasgow . .	26,000,000	48 ,,	1,550,000	60s.
Manchester .	11,000,000	25 ,,	1,320,000	60s.
Liverpool . .	11,000,000	24 ,,	1,650,000	72s.
Boston . .	10,000,000	50 ,,	600,000	60s.
Dublin . .	7,000,000	24 ,,	610,000	37s.
Hamburg . .	5,000,000	22 ,,	170,000	15s.
Edinburgh .	5,000,000	22 ,,	510,000	40s.

London is much behind the great American cities in the quality[2] and quantity of water. The purest water-supply in Great Britain is that drawn from Loch Katrine for Glasgow, which has less than two grains of decomposed matter per gallon; nevertheless the Boston supply is 35

[1] London could borrow the money at 4 per cent, and relieve the citizens to the amount of £800,000 per annum.

[2] London water supply in 1877 reached 121,000,000 gallons, viz.—

Unexceptionably pure . .	7,000,000 gallons.
Sometimes pure . . .	53,000,000 ,,
Polluted with sewage . .	61,000,000 ,,
Total	121,000,000 ,,

per cent, and the Charles River, United States, 15 per cent, purer. No city in modern times can compare with ancient Rome, which had nine aqueducts, 255 miles total length, giving 377,000,000 gallons daily, or three times the actual supply for London. It is proposed by J. F. Bateman to draw a supply of 100,000,000 gallons daily from Wales, 183 miles distant, at a cost of one halfpenny per ton daily, or 40 per cent of the present charge; the construction of the works to cost £8,000,000 sterling, and the working expenses, when completed, £150,000 per annum.

The first gasometer was put up at Westminster in 1814.[1] Of thirteen gas companies since formed, some have amalgamated, there being now only six, with a capital of £11,000,000; the annual consumption of coal being 1,500,000 tons, to produce 350,000,000 cubic feet of gas weekly. It was not till 1821 that Oxford Street was lit with gas, the invention being received with the utmost hostility by Sir Humphrey Davy, Sir Joseph Banks, and other eminent men, as it appeared the projectors proposed also to heat the houses and do the cooking by means of stoves and pipes, and asked Parliament to punish any persons using candles or coals. The price of gas has been reduced as follows:—

1830	. . .	12s. per 1000 feet
1850	. . .	5s. ,,
1875	. . .	3s. 9d. ,,

London is lit at less cost than other large cities, but the gas is of a low power, as shown thus:—

[1] Watt's factory at Birmingham used gas in 1804, but it was already used in Holland. In January 1807 Sir Walter Scott wrote from London, "There is a madman here who proposes to light the city with smoke."

	Gas-light.	Cost per 1000 feet.
London	12 candles.	3s. 9d.
Paris[1]	12½ ,,	6s. 8d.
Berlin	15½ ,,	4s. 3d.
Vienna	9 ,,	5s. 8d.
New York	16 ,,	10s. 0d.
Glasgow	28 ,,	4s. 0d.
Liverpool	22 ,,	3s. 6d.
Edinburgh	28 ,,	4s. 0d.
Aberdeen	35 ,,	4s. 0d.
Manchester	22 ,,	3s. 0d.

The cost of street-lighting will be reduced as soon as the electric light is introduced. The British Museum uses four of these lights, equal to 20,000 candles or 1500 gas-lights, at a cost of only 4s. per hour. London uses 17 milliards of cubic feet per annum, or 50,000,000 cubic feet of gas daily, at a yearly cost of £3,000,000 sterling.

The London Fire Brigade is justly praised for its efficiency, for there is no large city with so small a force.

	Engines.	Men.	Annual cost.	Per inhabitant.
London	141	420	£79,000	4 pence
Paris	203	1500	98,000	11 ,,
New York	38	629	249,000	48 ,,
St. Petersburg	37	1149	...	...
Philadelphia	24	253	81,000	28 ,,
Boston	21	459	97,000	111 ,,
Hamburg	53	789	...	...
Berlin	50	1090	...	...
Chicago	16	201	76,000	43 ,,
Cincinnati	19	154	56,400	64 ,,

The United States spend £5,000,000 sterling per annum on this service, say 28d. per inhabitant; France only £1,000,000, or 6d. per head. Most fires in London occur on Saturdays, that is, 5 per cent over other

[1] The Gas Company of Paris has to share its profits with the Municipality, but its annual dividend nevertheless averages 22 per cent. Receipts, £2,750,000; net profit, £1,150,000.

days; whereas in Paris there are 28 per cent extra fires on Fridays. From whatever cause, it is very clear that fires in London are increasing faster than the population or the number of houses, viz.—

1840-42 .	One fire for 2690 inhabitants or 360 houses.
1850-52 .	One fire for 2608 inhabitants or 338 houses.
1862-64 .	One fire for 2080 inhabitants or 267 houses.

The number of victims averages thirty-five persons yearly, including firemen who die at their post. The firemen save eighty lives yearly. The cost of the fire brigade is equal to 8d. per annum on every £1000 insured, or £35 per million.

In 1739 the value of London house property was assessed at £28,500,000; at present it is little short of £500,000,000, the insurance offices showing that it increases £20,000,000 every year. In 1878 there were 17,000 new houses built, capable of accommodating 120,000 persons, the ordinary increase being 150,000 souls per annum. There are fifteen parks, including five suburban, with a total area of 6120 acres, free to the public.

The police force of London compares with the principal cities of America, as follows :—

	Policemen.	Annual cost.	Police per 100,000 inhab.	Cost per inhab.
London . .	10,477	£1,120,000	230	5 shillings
New York .	2,560	666,000	220	10 „
Philadelphia .	1,292	320,000	155	8 „
Boston . .	700	171,000	225	11 „

Nothing is more admirable in London than the number and variety of charitable institutions, supported at a cost of £5,215,000 per annum.

	No.	Annual cost.
Hospitals and dispensaries . . .	186	£576,000
Homes for old persons	172	400,000
Carry forward . . .		£976,000

	No.	Annual cost.
Brought forward .		£976,000
Homes for blind, deaf, dumb . .	46	171,000
„ sick poor	124	293,000
Orphanages and schools . . .		3,775,000
		£5,215,000

The revenue for supporting these institutions is obtained as follows:—

Endowments	£500,000 per annum
Subscriptions and donations .	4,700,000 „
	£5,200,000 „

This, of course, does not include a sum of £1,700,000 sterling for relief of paupers, making a grand total of £7,000,000, a sum exceeding the revenue of some second-class kingdoms in Europe.

The wealth of London is unequalled by any other city of ancient or modern times; its citizens are said to pay one-third of the income-tax of England, and the insurance companies suppose the value of insured and uninsured property to reach £1,600,000,000, say one-fifth of the capital value of the United Kingdom.

COLONIES AND POSSESSIONS.

In measuring the progress of the British Empire, it is necessary to distinguish between the colonies chiefly inhabited by our own race and the possessions which are merely ours by right of conquest.

Colonies.	Square miles.	Population.
Canada . . .	3,412,000	4,228,000
Australia . . .	3,173,000	2,616,000
South Africa . .	243,000	1,270,000
	6,828,000	8,114,000

Possessions.	Square miles.	Population.
India . . .	935,000	193,715,000
West Indies and Guiana	88,000	1,394,000
Sundry . . .	27,000	1,042,000
	1,050,000	196,151,000

The gross revenue of our colonies and possessions is £87,000,000, and therefore exceeds that of the United Kingdom. The gross trade is £322,000,000,[1] or three times that of the United Kingdom in the year of Queen Victoria's coronation. The shipping owned by the colonies is half what the merchant navy of Great Britain amounted to when Prince Albert opened the Hyde Park Exhibition. Finally, the population is six times greater than that of the mother country, and the area much larger than Europe.

[1] This is more than the actual commerce of Germany or the United States.

COLONIES.

The history of the world offers no example that surpasses the growth of our colonies, which were technically known as the "Plantations," when our grandfathers annually voted in Parliament a sum of £35,000 for their maintenance. If we take the three principal colonies, Canada, the Cape, and Australia, we shall find their advancement was after this manner:—

	1840.	1860.	1878.
Population .	1,558,000	4,969,000	8,040,000
Trade . .	£7,430,000	£63,720,000	£147,610,000
Revenue .	£784,000	£10,175,000	£25,781,000

The increase of commerce and revenue has far exceeded that of population, the ratio having risen as follows:—

	Commerce.	Revenue.
1840 .	£5 per inhabitant	10s.
1860 .	13 ,, ,,	40s.
1878 .	18 ,, ,,	62s. 6d.

Comparing the colonies with one another, we find as follows:—

	Canada.	Cape.	Australia.	General.
Population . .	4,228,000	1,270,000	2,616,000	8,114,000
Commerce per inhabitant	£10	£9	£37	£18
Revenue . . .	25s.	52s.	140s.	64s.
Debt . . .	£8	£5	£30	£15

Taking the average of the three colonies, it appears that the colonists have the same ratio of trade as we have in the United Kingdom, and their taxation is also on a par with ours (including local taxes), but their debt is relatively only half the weight of ours.

The features and progress of each colony are so distinct from the others that we can better study them apart. Meantime the following statistics apply collectively to Canada, Cape, and Australia.

Annual trade.	Average 1868-1877.	
Imports from Great Britain	£31,100,000	48 per cent
,, ,, other countries	34,100,000	52 ,,
	£65,200,000	100 ,,
Exports to Great Britain	£31,420,000	52 per cent
,, other countries	28,050,000	48 ,,
	£59,470,000	100 ,,

The colonies import 10 per cent more than they export. Some are increasing their consumption of British merchandise, others diminishing; the ratio of imports from Great Britain compared to total imports being as follows:—

Imports into	1868.	1877.
Canada	50 p. c. from G. Britain	39 p. c. from G. Britain
Australia	43 ,, ,,	49 ,, ,,
Cape of Good Hope	55 ,, ,,	65 ,, ,,

The Colonial export trade varied no less remarkably:—

Exported from	1868.	1877.
Canada	33 p. c. to G. Britain	54 p. c. to G. Britain
Australia	57 ,, ,,	50 ,, ,,
Cape of Good Hope	70 ,, ,,	75 ,, ,,

Summing up the various items (see Appendix), we find as follows for the gross trade of the three colonies:—

	1868.	1878.
With Great Britain	49 per cent	50 per cent
,, other countries	51 ,,	50 ,,
	100 ,,	100 ,,

This shows that the relations with the mother country are 2 per cent stronger than they were ten years ago, in spite of the illiberal customs tariffs adopted by the colonists against our manufactures.

The number of emigrants from Great Britain in the interval between 1815 and 1878 was as follows:—

To Canada	1,558,299
„ Australia	1,226,499
„ South Africa and West Indies .	258,813
	3,043,611

Besides taking our surplus population the colonies afford profitable outlet for our manufactures. The average of twenty years showed that the colonies (not including India, etc.) consumed £23,000,000 per annum of British manufactures, while the total cost to the mother country was under £2,300,000. At present Canada and Australia are self-supporting.

AUSTRALIA.

Less than a century has elapsed since Captain Philip first planted the British flag (in 1788) upon the shores of New Holland, near the site of the present city of Sydney. The settlers had brought a few cows, sheep, goats, pigs, and horses, from which are descended the 70,000,000 animals that now constitute the great wealth of Australia. So slow was the progress of the colony that twelve years later the population barely reached 6000 souls. In 1813 the Blue Mountains behind Sydney were first crossed by Messrs. Wentworth and Lawson, following whose steps a number of squatters soon established themselves on the Government lands. Some obtained free grants, others merely a squatter's right, the latter paying £10 a year for a run of ten square miles of land. As settlers began to arrive, the Government, in 1831, stopped the free grants, and fixed the price at 5s. per acre, this being increased to 12s. in 1838, and to £1 in 1842. The flocks multiplied so rapidly that in 1850 Mr. Palmer wrote :—"There are men possessing farms worth £30,000 or £40,000, who

landed here without a guinea. It is not uncommon for one of these men to have 20,000 acres of land, stocked with 40,000 sheep or 4000 horned cattle." Between 1832 and 1840 the Government sold more than 2,000,000 acres, at prices ranging from 5s. to 33s., the half of the proceeds being given as a bonus to shipowners to bring out settlers from England. The export of wool had reached a value of £1,000,000 sterling. In 1850, when the colony of Victoria was separated from New South Wales, the population of Australia showed as follows:—

Colony.	Population.	Capital.	Population.
New South Wales	190,000	Sydney	60,000
Victoria	77,000	Melbourne	10,000
South Australia	75,000	Adelaide	10,000
Western Australia	6,000	Perth	2,000
Tasmania	70,000	Hobart Town	22,000
New Zealand	26,700	Dunedin	5,000
	444,700		

In the last thirty years the population has multiplied five-fold, chiefly owing to the discovery of gold in 1851, from which date, down to 1878, Australia produced £247,000,000 of the precious metal, viz.—

	Production.	Per annum.
1852-1862	£110,760,000	£10,070,000
1863-1873	101,310,000	9,210,000
1874-1878	34,930,000	6,980,000
	£247,000,000	£9,200,000

During the last five years the gold-fields[1] employed 48,500 miners and 1100 steam-engines, representing 24,000 horse-power: the average product per miner was £144 per annum. Gold-digging is now superseded by

[1] Some of the mines are very deep—the Magdala, for example, 1990 feet.

sheep-farming, as shown by the exports of wool and those of gold in 1877:

Value of wool exported	£19,460,000
Do. of gold „	7,499,900
Surplus for wool	£11,860,100

The population has more than doubled since 1860, as follows:—

Population of	1860.	1879.	Increase.
New South Wales	358,000	690,000	92 per cent.
Victoria	540,000	894,000	66 „
South Australia	127,000	247,000	97 „
Western Australia	15,700	29,000	84 „
Tasmania	90,000	111,000	23 „
New Zealand	99,000	434,000	335 „
Queensland	35,000	211,000	500 „
Total	1,264,000	2,616,000	108 „

Since 1876 the population has increased over 100,000 per annum, viz.—

Immigrants	51,400
Natural increase	50,800
	102,200

The highest birth-rate and the lowest death-rate are found in New Zealand, where the natural increase (1871-1877) averages 3 per cent; while the other colonies, in the aggregate, give only 2 per cent per annum.

	Births per 1000 inhab.	Deaths.	Increase.
New Zealand	41	11	30
Queensland	40	16	24
New South Wales	38	14	24
South Australia	38	14	24
Victoria	34	14	20
Western Australia	32	15	17
Tasmania	30	16	14
General average	36	14	22

At this rate, the present increase is about 57,500 per annum. The number of births to marriages is higher than any other country, except Ireland: the exact ratio for 1871-77 showed 520 births to 100 marriages. The death-rate is the lowest in the world. The marriage-rate is below the European average, and ranges from 12 per 1000 in Western Australia to 16 in New South Wales and Queensland.

Agriculture and pastoral industry may be said to progress 50 per cent in ten years, as shown by the following Table :—

	1867.	1877.	Increase.
Acres under grain	1,520,000	2,794,000	90 per cent
Crop . . .	16,200,000 bushels	41,300,000 bushels	150 „
Horned cattle .	3,887,000	7,125,000	80 „
Sheep. . .	47,285,000	57,768,000	22 „

The wheat crops vary from 9 bushels per acre in South Australia to 31 in New Zealand, and the total grain product, as compared with population for a term of ten years, shows as follows :—

	Bushels per inh.	Crops per acre.	Tillage in 1879.	Per inh.
South Australia .	. 87	9 bushels	2,011,000 acres	8
New Zealand .	. 31	31 „	2,054,000 „	5
Tasmania . .	. 17	20 „	144,000 „	1¼
Western Australia	. 15	12 „	51,000 „	1¾
New South Wales	. 13	21 „	614,000 „	1
Victoria . .	. 10	16 „	1,609,000 „	1¾
Queensland . .	. 8	30 „	112,000 „	½
General average	. 16	16 „	6,595,000 „	2¼

The exportation of grain averages 15 million bushels, worth nearly £2,000,000 sterling. The vintage averages 1,800,000 gallons wine, the yield being 120 gallons per acre.

Sheep-farming, however, is of greater importance than

agriculture, as wool constitutes almost 50 per cent of the total exports. The subjoined Table shows the number of sheep in the various colonies, and the average of clip according to the export returns (for a medium of three years) :—

	Sheep.	Average fleece.
New South Wales . . .	23,968,000	7¼ lbs.
New Zealand	13,069,000	4½ „
Victoria	9,379,000	5½ „
South Australia . . .	6,378,000	6¼ „
Queensland	5,564,000	4 „
Tasmania	1,839,000	4 „
Western Australia . . .	869,000	4½ „
	61,066,000	6 „

The wool trade of Australia is hardly fifty years old, as shown in the returns of exports, viz.—

	Quantity.	Value.
1830 . .	2,000,000 lbs.	£100,000
1850 . .	39,000,000 „	2,100,000
1877 . .	354,000,000 „	19,460,000

If we suppose a uniform value of £5 each for cattle,[1] and 10s. for sheep, the wealth represented by farming stock will appear as follows :—

	Value of stock.	Ratio per inhabitant.
New South Wales . .	£28,400,000	£41
New Zealand . . .	9,700,000	23
Queensland . . .	15,270,000	74
South Australia . .	5,160,000	22
Tasmania . . .	1,840,000	18
Victoria	12,430,000	15
Western Australia . .	910,000	33
	£73,710,000	£28 p. inhab.

The returns for 1879 show the various kinds of farm-stock, which at the above valuation will stand thus :—

[1] Actual prices are much less.

	Number.	Value.
Cows	7,403,000	£36,500,000
Sheep . . .	61,066,000	30,500,000
Horses . . .	1,010,000	6,100,000
Pigs	815,000	610,000
		£73,710,000

So much attention is paid to the refinement of breeds, that Mr. Gibson of Tasmania made £5000 out of a merino ram, and some of the New Zealand farmers have imported horses and horned cattle from England, worth £1000 per head.

The annual value of the farming products may be summed up thus:—

46 million bushels grain	£7,280,000
1½ „ gallons wine . . .	75,000
360 „ lbs. wool	19,700,000
Meat, hides, butter, potatoes, etc. . .	26,200,000
	£53,255,000

This is equal to £20 per inhabitant, against £12 in the United States, and £8 in Great Britain. The sale of Crown lands is progressing in the following manner:—

	Sold.	Sum.	Per acre.	Sales per ann.
1832-1873	48,000,000 acres	£45,000,000	18s. 9d.	1,300,000 acres
1874-1877	20,250,000 „	24,000,000	23s. 6d.	5,050,000 „

The area as yet unsold is twenty-five times as large as the United Kingdom, much of it being valueless from want of water.

The average land sales in 1874-77 showed thus per annum:—

	Acres.	Sum.	Per acre.
New South Wales .	3,060,000 per an.	£3,060,000	20s.
New Zealand . .	605,000 „	907,000	30s.
South Australia . .	525,000 „	850,000	35s.
Carry forward .	4,190,000 „	£4,817,000	

	Acres.		Sum.	Per acre.
Brought forward	4,190,000	per an.	£4,817,000	
Victoria . . .	440,000	„	550,000	25s.
Queensland . . .	350,000	„	225,000	12s. 6d.
Tasmania and Western Australia . . .	90,000	„	110,000	25s.
	5,070,000	„	£5,702,000	23s.

Revenue and public debt have kept pace rather with industry than with population, and therefore appear large compared to the number of inhabitants.

	Revenue.	Per inhab.	Debt.	Per inhab.	Trade per inhab.
1850. .	£930,000	£2	...	...	£22
1863. .	7,766,000	6	£16,720,000	£12	45
1879. .	17,611,000	7	78,453,000	30	36

The debts of the various colonies have arisen from two causes, immigration and public works, both of which are so reproductive that the trade is 23 per cent more than the debts, viz.—

	Debt.	Per head.	Trade.	Per head.	Revenue.	Per head.
N. Zealand	£26,691,000	£60	£14,772,000	£34	£3,552,000	£8
N. S. Wales	12,540,000	18	27,733,000	40	4,984,000	7
Victoria . .	20,011,000	22	31,520,000	36	5,374,000	6
Queensland .	8,953,000	43	6,818,000	33	1,559,000	7
S. Australia .	8,337,000	34	11,075,000	44	1,593,000	6
Tasmania .	1,740,000	16	2,726,000	25	386,000	3½
W. Australia	181,000	6	807,000	27	163,000	6
	£78,453,000	£30	£95,451,000	£36	£17,611,000	£7

The total amount of British capital invested in Australia exceeds £150,000,000, viz.—

Loans	£78,450,000
Banks	16,200,000
Companies . . .	56,000,000
	£150,650,000

The banking statistics of 1877 compared with 1873 show an increasing activity that speaks eloquently for the progress of Australia.

	1873.	1877.	Increase.
Emission of notes .	£3,913,000	£4,339,000	11 per cent
Deposits	32,385,000	48,187,000	50 ,,
Discounts . . .	37,675,000	59,419,000	60 ,,
Specie reserve . .	7,904,000	8,484,000	8 ,,

The specie reserve is double the amount of notes, and stands as 16 per cent of the total liabilities, which are £53,250,000. As a proof of the prosperity of the colonists, it is shown that deposits increase at the rate of £4,000,000 sterling per annum, or 30s. per head. This is about the annual increase of wealth, as may be seen by comparing the agricultural, commercial, and general statistics of 1877 with those of 1867.

	1867 to 1877, Average increase.
Increase of bank deposits . . .	£4,050,000 per annum
,, farm-stock[1]	2,610,000 ,,
,, wheat crop (2½ million bushels)	500,000 ,,
	£7,160,000 ,,
Increase of public debt	3,600,000 ,,
Net increase of wealth .	£3,560,000 ,,

The balance of trade is pretty even, the summary for ten years being as follows:—

	1868-77.	Per annum.
Imports . .	£383,200,000	£38,320,000
Exports . .	373,500,000	37,350,000

The returns for 1878 show very much higher than the above average for ten years, viz.—

	Imports.	Exports.	Total trade.
Victoria . . .	£16,162,000	£14,926,000	£31,088,000
New South Wales .	14,769,000	12,966,000	27,735,000
Carry forward .	£30,931,000	£27,892,000	£58,823,000

[1] See page 186.

Brought forward .	£30,931,000	£27,892,000	£58,823,000
New Zealand . .	8,756,000	6,016,000	14,772,000
South Australia . .	5,720,000	5,355,000	11,075,000
Queensland . . .	3,436,000	3,190,000	6,626,000
Tasmania . . .	1,325,000	1,316,000	2,641,000
Western Australia .	379,000	428,000	807,000
	£50,547,000	£44,197,000	£94,744,000

Imports have increased 65, exports 50, per cent since 1867, and tonnage arrivals 75 per cent, the entries now averaging 3,500,000 tons. In 1874 these colonies owned 2000 vessels, of 223,000 tons in the aggregate.

The banking returns compare with those of Canada thus :—

	Canada.	Australia.	Remarks.
Emission . .	39s. p. inh.	38s. p. inh.	Australia 2½ p. cent less
Deposits . .	82s. „	350s. „	„ 327 „ more
Specie reserve .	9s. „	78s. „	„ 770 „ „
Discounts . .	£6 „	£24 „	„ 300 „ „
Paper money to trade	19 to 100 „	5 to 100 „	„ 70 „ less

This shows that the savings of the colonists are four times greater than in Canada, and the activity of banking is also quadruple, as compared with population. The deposits in 1877 for each of the colonies, and the increase since 1873, were as follows :—

1877.	Amount.	Per inh.	Increase since 1873.
New South Wales . .	£16,325,000	£30	£12 per head
Victoria	16,504,000	21	6 „
South Australia . . .	3,481,000	18	6 „
Tasmania	1,727,000	17	8 „
New Zealand . . .	6,238,000	22	5 „
Queensland . . .	3,912,000	30	15 „
	£48,187,000	£24	£8 „

Judged by this standard, the most prosperous of the colonies is the youngest, Queensland, which is now in its twentieth year, and shows a higher rate of bank deposits than any country of Europe or America.

The first steamboat built in Australia was at Sydney in 1831. The first railway was begun at Melbourne in 1853. At present there are 3977 miles of railway, and 25,400 miles of telegraph.

	Railways.	Telegraphs.
New Zealand . .	1090 miles	3434 miles
Victoria . . .	1052	2970
New South Wales .	733	7078
South Australia . .	454	4217
Queensland . .	428	5410
Tasmania . . .	172	693
Western Australia .	48	1568
	3977	25,370

The dearest railways were those of Victoria, the lines made by the Government of Melbourne averaging £32,860 per mile, and costing a sum of £13,000,000.

Public instruction is at a high standard. In 1875 there were 4826 State schools maintained at a cost of £820,000, and attended by 355,600 children, being 16 per cent of the population; this did not include private schools. The Press is also highly respectable, and there are over 200 newspapers, one of which is in the Maori tongue. The public libraries and scientific associations are numerous and flourishing.

New South Wales.

This was the parent colony, founded at Sydney in 1788. The population at the beginning of the present century amounted to 6000 souls, the farming-stock to 8850 head of all descriptions. In 1803 Captain M'Arthur arrived with 24 merino sheep, and in 1807 the quantity of 245 lbs. wool was exported to England. This may be considered the origin of the great staple industry which now exports from Australia 365 million lbs. wool yearly. The *Sydney Gazette* was founded in 1803, and the Bank of New South Wales

in 1817. The latter commenced operations with a capital of £20,000, the issue of its notes superseding the shopkeepers' tickets that passed in place of money. At this time the colony was supposed to possess 5000 cows, 250,000 sheep, and 500 horses, and so actively did the Government prosecute public works, that in 1821 more than £10,000,000 sterling had been spent on roads and bridges. In 1829 trial by jury was established, and in the following year Captain M'Arthur planted the first vines on his estate.[1] In 1831 Sydney College was opened, and the same year saw a steamboat launched on Australian waters. Gas was introduced in 1841, and ten years later, before the influx of gold-diggers, the colony numbered 190,000 inhabitants, with a revenue of £317,000, and an import and export trade amounting in the aggregate to £4,500,000. It had already been stripped of 1,000,000 square miles of territory by the formation of the new settlement of South Australia (1836), and Victoria (1850), which took from it also 120,000 population. New South Wales has produced more than £50,000,000 of gold, or one-fifth of the total exported. Wool has been, however, in the last ten years, a more valuable staple than gold:—

	Ten years.
1868-77 exported gold . . .	£18,200,000
„ „ „ wool . . .	30,410,000

The growth of population, trade, and revenue in the last ten years is shown as follows:—

	1867.	1877.	Increase.
Population . . .	432,000	662,000	54 per cent
Imports	£6,600,000	£14,607,000	120 „
Exports	£6,881,000	£13,126,000	92 „
Gross trade . . .	£13,481,000	£27,733,000	105 „

[1] The wines were exhibited in 1851 at London.

	1867.	1877.	Increase.
Revenue	2,569,000	5,748,000	125 per cent
Debt	6,918,000	11,724,000[1]	70 „
Arrivals, tonnage . .	682,000	1,119,000	65 „

This colony exports wool, grain, etc., to a value of £20 per head of the population. Wine is grown for home consumption, the vintage averaging 700,000 gallons. There are forty coal-mines, producing 1,500,000 tons.

Sydney, the capital, is a flourishing city of 134,000 souls, with colleges, libraries, theatres, printing-houses, clubs, and public offices, on the scale of a second-class European capital. This colony has 130 vessels, of 16,000 tons in the aggregate. Sydney dry-dock, 450 × 60 feet, can admit the largest steamers and war-vessels.

TASMANIA.

This colony, formerly known as Van Diemen's Land, comprises an island about the size of Ireland; and although over seventy years old, its population is little over 100,000 souls. It was founded by Lieutenant Bower in 1803, and when visited by Count Strzelacki, in 1835, presented a more advanced style of agriculture than any other of the new settlements—"No country reminds the traveller so much of England." Nevertheless, its progress has been slow. From 1803 till 1873 the Government sold 3,900,000 acres for £1,505,000, say 8s. 6d. per acre; and since 1873 the sales have averaged 46,000 acres per annum, at 25s. per acre. This high price apparently deters settlers, as the number of persons who left the colony between 1868 and 1876 was greater than that of new-comers. The natural increase is, moreover, the smallest in Australia, the death-

[1] The debt has since been increased by a loan of £3,000,000.

rate being the highest, and the birth-rate the lowest, of these colonies.

The growth of ten years in population, trade, etc., is as follows:—

	1867.	1877.	Increase.
Population .	96,000	107,000	11 per cent
Imports . .	£856,000	£1,309,000	53 „
Exports . .	£790,000	£1,417,000	75 „
Gross trade .	£1,646,000	£2,726,000	66 „
Revenue . .	£252,000	£362,000	44 „
Debt . .	£1,019,000	£1,590,000	57 „
Arrivals, tonnage	100,000	160,000	60 „

The value of exports is equal to £13 per head of the population. This is the lightest taxed of the Australian colonies, say 70s. per head, against an average of £7 in the other colonies. There is a line of railway across the island, from Hobart Town to Launceston, 173 miles. Hobart Town is a well-built city of 30,000 souls, with several institutions and printing-offices. This colony possesses a fleet of 180 sailing vessels and ten steamers, trading to Australian (mainland) and New Zealand ports, with an aggregate burden of 18,000 tons.

Western Australia.

This colony was founded by Thomas Peel in 1829, with a batch of 400 settlers, the British Government having bestowed on him a grant of 250,000 acres. Fresh settlers arrived in 1830, at which time the population numbered 1290 souls, and the stock comprised 57 horses, 204 cows, and 1100 sheep; the area under tillage covered 1000 acres, and the amount of capital invested was £42,000. Nothing more was heard of the colony for nearly twenty years, until a traveller visited it in 1848, and described it as follows:—"There are nearly 6000 inhabitants, who

have under tillage 7100 acres, and their stock comprises 2000 horses, 11,000 cows, 140,000 sheep, 1400 goats, and 2300 pigs. The village of Perth, the capital, has two newspapers, a bank (paying 12½ per cent annual dividend), a harbour with 16,000 tons of annual shipping entries, and exports 300,000 lbs. of wool, worth £10,000 per annum. The revenue is £10,500, the imports £45,000, and exports £30,000 a year."

It is the largest of the Australian colonies in extent, and the most insignificant in every other respect. Nevertheless, it has made considerable progress in the last ten years.

	1867.	1877.	Increase.
Population .	20,500	27,900	37 per cent
Imports . .	£205,000	£363,000	80 ,,
Exports . .	£174,000	£373,000	120 ,,
Gross trade .	£379,000	£736,000	95 ,,
Revenue . .	£90,400	£165,400	83 ,,
Debt . . .	...	£161,000	...
Arrivals, tonnage	51,000	76,000	50 ,,

The enormous increase of exports shows the colony to be progressing very favourably.

There are 35,000 farms, of about 700 acres each, being mostly used for pasture.

The colonists own 17 vessels, of 894 tons in the aggregate. The pearl-fishery produces £70,000 per annum.

South Australia.

In 1836 this territory was taken from New South Wales and made a separate colony, with an area of 904,000 square miles. It was founded by Mr. Gibbon Wakefield and a joint-stock company, who sold land to settlers at 12s. per acre. Adelaide, the nucleus of the colony, was, in 1837, a group of mud huts covered with canvas, but

some of the colonists preferred to live in hollow gum-trees. For some years the colonists suffered great privations: in 1840 bread was sold at a shilling per lb. Subsequently affairs became more prosperous, and when Mr. Lancelot visited the settlement in 1848, he found wheat growing 7 feet high, and producing 57 bushels to the acre! The village of mud huts had expanded into a fine city of 10,000 souls, with 3 newspapers, and the colony numbered 38,700 inhabitants, of whom 7000 were Germans. Their stock comprised 6000 horses, 100,000 cows, and 1,000,000 sheep, the area under tillage covering 65,000 acres.

Of late years there has been a prodigious development of agriculture, this colony having now 2,000,000 acres under plough. In 1877 the colonists raised 9,000,000 bushels, or one ton of wheat per inhabitant.

Pastoral interests have doubled in ten years, and wool exports trebled in fifteen years.

The value of exports is equal to £20 per inhabitant, and the increase of the colony in ten years was as follows:—

	1867.	1877.	Increase.
Population .	157,000	237,000	50 per cent
Imports . . .	£2,506,000	£4,626,000	84 ,,
Exports . .	£3,165,000	£4,627,000	47 ,,
Gross trade .	£5,671,000	£9,253,000	64 ,,
Revenue . .	£1,126,000	£1,441,000	28 ,,
Debt . . .	£1,078,000	£4,737,000	360 ,,
Arrivals, tonnage	172,000	336,000	48 ,,

The sale of Crown lands has been for the last three years greater than in any other colony except New South Wales. In 37 years down to 1874 the Government disposed of 5,500,000 acres for £6,000,000 sterling, say 22s. per acre.

Since 1874 the sales have averaged 530,000 acres yearly, at 40s. per acre. The farm stock is worth £5,000,000 sterling, or £22 per inhabitant. This colony

owns 193 vessels, with 23,000 tons. Adelaide is a flourishing city, and has a railway to the copper-fields of the interior.

New Zealand.

This colony consists of two principal islands and many small ones, covering an area of 105,000 square miles, about equal to that of the United Kingdom. It is aptly termed the Britain of the South Pacific, possessing most of the natural gifts of England, and a milder climate.

The first settlers arrived on the northern island in 1837, and built three wooden houses, each forty feet long. Nevertheless, it was not till January 1840 that the first batch of colonists landed, at the place where Wellington now stands, and in the following year another at Port Nelson. In 1843 the little colony counted 10,000 inhabitants, of whom 6000 belonged to the New Zealand Farming Company;[1] the farms under cultivation covered 1400 acres, and the cattle consisted of 183 horses, 2200 cows, 6500 sheep, 340 goats, and 1100 pigs. Numerous Scotch and other settlers now began to arrive, so that in 1852 the colony was highly flourishing. Its commerce reached £500,000 sterling; its area of agriculture comprised 17,000 acres; and numerous rising towns at various places had already established eight newspapers. The discovery of gold at a later period further stimulated progress; and in the last ten years the rise of the colony, especially in population, has been so rapid as to bid fair to leave all the rest of Australia behind.

[1] This Company was formed in London in 1839, to buy up a tract of country, near Wellington, from an English adventurer, and thus prevent the scheme of Baron Thierry, a Frenchman, who styled himself King of New Zealand.

	1867.	1877.	Increase.
Population .	177,000	418,000	137 per cent
Imports . .	£5,345,000	£6,973,000	30 „
Exports . .	£4,645,000	£6,327,000	37 „
Gross trade .	£9,990,000	£13,300,000	33 „
Revenue . .	£1,864,000	£3,916,000	115 „
Debt . .	£5,781,000	£20,691,000	257 „
Tonnage arrivals	309,000	395,000	30 „

Immigrants keep pouring in at the rate of 26,000 per annum, while the natural increase is greater than in the other colonies — say 3 per cent yearly — New Zealand having the highest birth-rate and the lowest death-rate.

The aboriginal race of Maoris is rapidly dying out, as shown in the following Table:—

	Maoris.
1842	114,000
1858	55,700
1872	39,000

At this rate there will be hardly any left by the close of the present century.

From 1840 down to 1874 the Government disposed of 12 million acres—say 400,000 acres per annum—at an average price of 10s. per acre. In the last three years (1875-77) the sales averaged 600,000 acres, at 30s. per acre—the Government having still 53 million acres for sale, about the same area as the island of Great Britain.

New Zealand is the only country that grows heavier wheat crops per acre than England; the average for the last ten years was 31 bushels. The total extent under tillage is 2,054,000 acres, of which one-fourth is under wheat. The crop of 1877 produced 13 million bushels, being as 28 to the acre, or 32 per inhabitant. No other colony, except South Australia, raises so much grain compared with population.

Pastoral industry is no less flourishing. The stock

comprises 13 million sheep, half a million cows, 100,000 horses, and 250,000 pigs, worth close on £10,000,000, or £23 per inhabitant. The exports average £15 on the population, wool being the principal item.

The colonists possess 74 steamers and 428 sailing-vessels, making up 42,000 tons, to trade chiefly with Australian ports, the distance to the mainland being 1200 miles.

There are clubs, libraries, printing-offices, newspapers, etc., at Dunedin, Auckland, Wellington, Canterbury, and other towns. Dunedin has 20,000 inhabitants, Auckland 14,000, the latter being the seat of Government.

VICTORIA.

A wandering party of sheep-farmers from Tasmania, attracted by the beauty of the Yarra-Yarra river, settled on its banks in 1835, on the spot where the superb city of Melbourne now stands. Two years later a tourist visited the settlement, and described it thus:—

"Embowered in forest, on the river bank, the place looks like an Indian village, but the settlers are wealthy: they possess 150 horses, 2500 cows, and 140,000 sheep; the population counts about 500 souls. The village consists of a wooden church, two wooden inns, a group of wooden huts, three wooden shops, and a market supplied with kangaroo meat. There is a newspaper published in manuscript by Mr. Faulkner."

In less than ten years afterwards Melbourne was a rising town, with two banks, clearing 100,000 tons of shipping for England, with exports over £1,000,000 sterling in value.

Only a year before gold was discovered the settlers obtained permission to constitute themselves into a separate colony, for they now numbered 77,000 souls, and thus the

colony of Victoria was established in 1850, with a territory of 88,000 square miles, or twice the area of the kingdom of Portugal; this being the smallest of all the Australian colonies except Tasmania.

Victoria is at present in many respects the foremost colony of the entire group. It stands first in commerce, has the greatest length of railways, and its capital, Melbourne, is termed the Paris of the southern hemisphere. The gold-fields in 1851 gave an extraordinary impulse to everything, the quantity of gold-dust extracted in twenty-five years exceeding £170,000,000 sterling. In the last ten years the progress has been solid and uninterrupted.

	1867.	1877.	Increase.
Population	635,000	861,000	35 per cent
Imports	£11,674,000	£16,362,000	40 „
Exports	£12,724,000	£15,158,000	20 „
Gross trade	£24,398,000	£31,520,000	30 „
Revenue	£3,449,000	£4,724,000	38 „
Debt	£9,481,000	£17,019,000	76 „
Tonnage arrivals	605,000	937,000	55 „

Although the gold-fields produced last year over £3,000,000 sterling, the wealth of Victoria consists chiefly in its pastoral and agricultural industries. From 1850 down to 1874 the Government sold 9,250,000 acres, say 400,000 acres a year, at 35s. an acre. In the last four years the sales have averaged 430,000 acres at 16s. per acre. The Government has still 45 million acres unsold, but half this extent is leased to squatters. The returns for 1877 show as follows:—

	Number.	Area.	Average.
Farms	45,450	15,000,000 acres	330 acres
Squatters' runs	865	23,000,000 „	27,000 „

The area under crops is only 1,420,000 acres, the rest being used for pasture. The returns of agriculture for 1877 show thus:—

	Acres.	Product.	Per acre.
Grain . . .	690,000	9,600,000 bushels	14 bushels
Potatoes . .	37,000	115,000 tons	3 tons
Wine . . .	4,400	460,000 gallons	105 gallons
Sundries . .	688,600	...	...
	1,420,000		

The value of rural property has increased since 1867 three times as fast as city property, viz.—

	1867.	1877.	Increase.
Rural property . .	£21,500,000	£48,300,000	125 per cent
City property . .	20,600,000	29,280,000	45 „
	£42,100,000	£77,580,000	85 „

The assessment of property is equal to £90 per inhabitant.

Comparing the value of gold-dust and of wool exported in the last ten years, we find as follows :—

	1868-77.
Gold-dust	£49,000,000
Wool	51,000,000

At present the latter item stands for three times as much as the former.

Exports compared with population are as £18 per head. The farm-stock is worth over £12,000,000, or £15 per inhabitant.

This colony possesses a fleet of 61 steamers and 397 sailing vessels, together 61,000 tons, trading to New Zealand and other colonies.

Melbourne is the seat of Government, with a population of 150,000 souls. The public buildings are of magnificent proportions and elaborate architecture; the newspapers are worthy of England; and the clubs, theatres, parks, libraries, museums, etc., give the city an aspect superior in taste and affluence to Sydney, Rio

Janeiro, Lima, or any other capital in the southern hemisphere.

QUEENSLAND.

This is the newest of Australian settlements, having been taken from New South Wales in 1859, with an area of 670,000 square miles. Having begun with 25,000 inhabitants, it progressed so rapidly that its population now reaches a quarter of a million.[1] The growth of the last ten years has been as follows :—

	1867.	1877.	Increase.
Population .	77,000	195,000	160 per cent
Imports .	£1,748,000	£4,069,000	133 ,,
Exports . .	£2,199,000	£4,361,000	100 ,,
Gross trade .	£3,947,000	£9,051,000	125 ,,
Revenue .	£669,000	£1,437,000	104 ,,
Debt . .	£3,344,000	£7,685,000	130 ,,
Tonnage arrivals	148,000	478,000	220 ,,

From 1859 till 1874 the Government sold 1,300,000 acres at 25s. per acre. Since 1874 the sales have averaged 350,000 acres, at 12s. 6d. per acre, the lands unsold amounting to no less than 426,000,000 acres, or five times the area of the United Kingdom.

Pastoral industry shows farm-stock worth about £15,000,000, or £75 per inhabitant, this being the highest ratio in all the Australian colonies.

The value of exports is as £21 per head of the population. This little colony has spent £6,000,000 on railways, being £30 for each inhabitant.

CANADA.

The population of British North America in 1806 was 476,000 souls. Since that time it has multiplied nine-

[1] In 1878 estimated at 211,000 souls.

fold, being relatively a greater increase than in the United States.

	Inhabitants.	Increase.
1806	476,000	...
1831	1,069,000	24,000 per annum
1851	2,482,000	70,000 ,,
1871	3,833,000	70,000 ,,

At the rate of increase which prevailed from 1861 to 1871 the population would now reach 4,250,000, distributed in the following manner, and showing increase from 1861, as expressed below :—

	1861.	1879.	Increase.
Canada Proper .	2,508,000	3,094,000	24 per cent
Nova Scotia . .	331,000	446,000	34 ,,
New Brunswick .	252,000	310,000	24 ,,
Newfoundland .	123,000	167,000	36 ,,
Prince Edward Island	81,000	105,000	30 ,,
British Columbia .	60,000	106,000	75 ,,
	3,355,000	4,228,000	27 ,,

All the above formed distinct colonies down to 1867, when the Dominion of Canada was constituted. Although Newfoundland has not yet joined the Federation, it is more convenient to consider it as an integral part of the same.

Since 1851 the number of immigrants has been 1,500,000, but more than half proceeded onward to the United States, as appears from the following Table :—

	1851-71.	1872-76.	Total.
Landed in Canada . .	1,051,000	351,000	1,402,000
Proceeded to United States .	595,000	179,000	774,000
Settled in Canada . .	456,000	172,000	628,000

In the absence of vital statistics we can arrive at the rate of natural increase by deducting immigration :—

	1851-71.	Per annum.
Immigration	456,000	22,800
Increase of population . . .	1,351,000	67,550
Natural increase . . .	895,000	44,750

This was equivalent, on a medium population (1861) of 3,296,000, to an increase of 12 per 1000 inhabitants per annum, being slightly lower than England, and hardly more than half the Australian rate. This slowness of increase may be partly an effect of climate, partly because one-third of the inhabitants are French, the least reproductive race in Europe.

The chief towns have increased more rapidly than the rest of the colony:—

	1852.	1872.	Increase.
Montreal .	58,000	107,000	85 per cent
Quebec . . .	40,000	60,000	50 „
Toronto . . .	31,000	56,000	80 „
Halifax . . .	...	30,000	...
St. John, N.B. .	...	27,000	...
Hamilton . .	...	26,000	...
St. John's, N.F. .	...	23,000	...
Ottawa . . .	...	22,000	...

The last named is the seat of the Legislature.

The total Indian population is now 102,360. The Government treats them with the utmost kindness, supporting fifty schools in their settlements, and giving them seeds and farming implements. Many of them possess large and valuable properties, as shown by the following returns:—

	Domesticated Indians.	Property.	Average per head.
Ontario . .	16,000	£1,968,000	£123
Quebec . .	11,000	363,000	33
	27,000	£2,331,000	£86

AGRICULTURE.

Sixty years ago agriculture was confined to the old

French "habitans," who had a chain of farms 400 miles long on the banks of the St. Lawrence. The quantity of grain produced was much in excess of the home consumption, for it appears by a statement in 1830 that the average exports of wheat to England during a period of twenty-five years were worth £256,000 per annum, or about 1,000,000 bushels.

In the first quarter of the present century free grants of 200-acre farms were given by Government to military and other settlers, on condition of building a hut and getting four acres under plough. The cost of a log hut was £12, that of a barn for grain £60—the colonists suffering great inconvenience for want of roads. In 1826 land-grants were abolished, and farm lots were put up for auction, the buyer paying the price in four annual instalments, without interest. Thousands of settlers took farms in Upper Canada, the rapid growth of which province is shown as follows :—

	Population.	Lands tilled.
1842 . . .	486,000	1,928,000
1852 . . .	952,000	3,698,000

It was no longer a mere wood-cutting colony, but a large producer of grain, the agricultural returns for 1852 showing as follows (for Canada proper) :—

Grain	45 million	bushels
Potatoes . . .	5½ „	„
Hay . . .	1½ „	tons
Butter and cheese .	29 „	lbs.

At this time farms were extending into the remote western backwoods, the Government price for land being 5s. per acre.

Gradually and steadily the white settlers penetrated the primeval forests, some of them only raising enough grain for their own support, while they felled timber on

the banks of the rivers and floated it on rafts five or six hundred miles down stream till reaching Quebec, a toil-some journey of fifty or sixty days. Meantime the open country of Manitoba attracted numerous farmers, and within the last seven years some colonies of Russian Mennonites have raised up in this out-lying territory such thriving settlements as have merited the warmest praise of the late Viceroy, Earl Dufferin. We learn also from Mr. Brassey that "in Manitoba you may drive a gig for 1000 miles straight over open prairie, suitable for wheat growing;" and here the Government gives free grants of 200-acre lots, on the same terms as the United States Homestead Law.[1] In the rest of Canada the settler will have to pay about 4s. an acre for the purchase of land. The statistics for 1874 showed a total of 368,000 farms, viz.—

	Number.	Approx. area.
Farms under 10 acres . .	40,280	250,000 acres
„ from 10 to 100 acres .	220,700	12,000,000 „
„ over 100 acres . .	107,400	22,000,000 „
	368,380	34,250,000 „

About one-half of this area was cultivated, the annual increase of tillage being about 260,000 acres.

	1861.	1874.	Increase.
Lands cultivated	13,062,000 acres	16,240,000 acres	3,000,000 acres
Value of farms .	£102,000,000	£131,000,000	£29,000,000
„ cattle .	24,000,000	33,000,000	9,000,000
Farm products .	6,000,000	10,000,000	4,000,000

The farming area in 1874 covered only 17 per cent of the provinces of Ontario and Quebec, and as Canada proper has an area of 201 million acres, it appears that the

[1] The conditions are, to build a log-hut, and bring 15 acres under cultivation. The land involves in some places a cost of £3 per acre for clearing timber. Wheat averages 20 bushels to the acre.

Government has still 167 millions for sale, less the lands granted to railways. All the above farms are held by their proprietors, except 44,000, which are in the hands of tenants. The grain crops in 1860 were found to reach 85 million bushels, while the green-crops comprised 60 million bushels of potatoes, peas, and turnips. In the last twenty years the production of wheat has increased so much that it is not uncommon for Canada to export 10 million bushels in a year. The home consumption probably reaches 30 million bushels, and the difference between imports and exports in the last six years has been as follows:—

	1872-77.	Per annum.
Imported breadstuffs . .	£16,050,000	£2,675,000
Exported ,, . .	19,210,000	3,202,000
Surplus Exports . .	£3,160,000	£527,000

This shows an average of 4,000,000 bushels per annum, so that Canada may be supposed at present to produce about 40 million bushels of wheat and 130 million of other grain; in all 170[1] million bushels from an area of 10 million acres. Ontario, formerly known as Upper Canada, stands for three-fourths of the agriculture of the Dominion.

Canada is not so well suited as Australia for pastoral industry. Nevertheless, the increase of flocks and herds has been very satisfactory.

	1861.	1874.	Increase.
Horses	727,300	866,100	20 per cent
Cows	2,323,000	2,702,000	18 ,,
Sheep	2,550,000	3,331,000	32 ,,
Pigs	1,245,000	1,425,000	15 ,,
Value of stock . . .	£24,000,000	£33,000,000	36 ,,

In the last three years pastoral industry has acquired

[1] An official report states that Canada raises 49 bushels grain per inhabitant.

additional interest from the shipments of beef and cattle to England, amounting to £50,000 worth weekly. The increase of dairy farming has been no less remarkable, the value of cheese and butter exceeding £3,000,000 per annum: in 1878 the production of cheese amounted to 40 million lbs., having doubled since 1874.

COMMERCE.

In 1809 the first steamer ploughed the waters of the St. Lawrence, but commerce made little progress for twenty years. A move was felt about 1830, and since that time trade has multiplied fifteen-fold, being four times greater than the increase in population. The returns stand thus:—

	Imports.	Exports.	Gross Trade.	Per inhab.
1832-34.	£1,430,000 p. an.	£980,000 p. an.	£2,410,000 p. an.	£2 : 10s.
1845-47.	2,380,000 „	2,090,000 „	4,470,000 „	2
1865-67.	17,490,000 „	14,170,000 „	31,660,000 „	9
1875-77.	23,370,000 „	17,810,000 „	41,180,000 „	10

Thus Canada, with only 4,000,000 inhabitants, carries on almost as great a trade as that of Great Britain at the beginning of the century. The commercial relations with the United Kingdom have fallen off in the last thirty years:—

	1850-51.	1877.
With Great Britain . .	55 per cent	47 per cent
„ Other Countries . .	45 „	53 „
	100 „	100 „

There has been no perceptible decline in the current of exports, of which 55 per cent still go to Great Britain, but Canada now takes only 39 per cent of her imports from us —a fall of one-third as compared with 1850-51. The sum of exports has diminished in the last five years, although the chief staples show an increase:—

	1872.	1877.	Increase.
Timber	£4,360,000	£4,340,000	...
Grain	2,390,000	2,860,000	20 per cent
Meat and Cattle . .	1,720,000	2,140,000	25 „
Fish	1,650,000	1,850,000	12 „
Sundries	8,287,000	6,040,000	...
	£18,407,000	£17,230,000	

The balance of trade is against Canada, averaging £5,000,000 per annum :—

	1868-1877.
Imports of ten years . . .	£221,000,000
Exports „ „ . .	172,000,000
Surplus imports . .	£49,000,000

The tonnage of arrivals in Canadian ports has risen from 430,000 tons in 1829 to 3,500,000 tons in 1877. The increase of the last ten years shows as follows :—

	1867.	1877.	Increase.
Arrivals . .	2,685,000 tons	3,608,000 tons	30 per cent

Meantime the colonial fleet of Canada is increasing at the rate of 60,000 tons yearly, and the size of the vessels is also greater than ten years ago :—

	Vessels.	Tonnage.	Average.
1868 . .	5820	776,000	134 tons
1877 . .	7360	1,310,000	178 „

The shipping, compared with population, was, in 1868, as 22 tons per 100 inhabitants, and in 1877 as 33 tons—a relative increase of 50 per cent. Canada possesses the fourth great mercantile navy of the world, coming next after Scandinavia, and before Germany. This fine fleet has sprung up in less than thirty years; as the total of Canadian vessels in 1850 was only 61,000 tons. The proportion of steamers is small.

	Tons.	Proportion.
Sailing vessels . .	1,233,000	94 per cent
Steamers . . .	77,000	
	1,310,000	

If the above be valued at £7 per ton, it will amount to £9,000,000 sterling, or £2 per head of the population, a ratio 33 per cent higher than in the United Kingdom.

Canada maintains 450 lighthouses, at a cost of £100,000 per annum, having built 96 new ones in six years.

MANUFACTURES.

The earliest record of manufacturing industry goes back no farther than 1830, when the returns showed thus:

"There are 1300 domestic looms, which turn out yearly 4,000,000 yards of woollen and linen manufactures.

"There are 7 foundries, 1086 mills of various kinds, not including 1580 saw-mills. The capital invested by wood-cutters is estimated at £1,250,000, and the export of timber averages £1,000,000 sterling per annum."

The official returns for 1878 sum up the manufactures as follows:—

Operatives . . .	188,000
Annual wages . .	£8,100,000
Production . . .	£46,000,000

Felling and sawing timber seem to be included among the manufactures, the exportation reaching 900 million cubic feet, worth £6,000,000 sterling.

FINANCES.

The growth of revenue and debt has been by no means so rapid as in Australia; and it may be said that Canada is, in this respect, one of the countries lightest burthened. The following Table explains itself:—

	Revenue.	Per inhabitant.	Debt.	Per inhabitant.
1840-51 .	£540,000	7s.	£1,226,000	£1
1867 . .	3,420,000	19s.	16,460,000	£5
1877 . .	4,784,000	23s.	28,027,000	£7

For half a century the colony cost Great Britain about £450,000 per annum, as the ordinary garrison was over 4000 men. Since 1867 it has been entirely self-supporting, and at present the total debt (including municipal) is £43,000,000.

Canada has 305 banks, the increase of banking business in ten years being as follows:—

	1867.	1877.	Increase.
Capital paid up .	£6,000,000	£14,760,000	145 per cent
Deposits . .	6,100,000	12,520,000	107 „
Discounts . .	10,200,000	24,700,000	145 „
Savings banks .	285,000	2,800,000	900 „

The issue of paper money amounts to £7,700,000, which is equal to 39s. per inhabitant, against 38s. in Australia. The deposits and discounts are much larger in the latter colony than in Canada (see page 191). The wealth of the colony in 1866 was summed up thus:—

Agricultural capital	£138,000,000
Houses, etc., in towns . . .	40,000,000
Commercial capital	28,000,000
Shipping	6,000,000
Personal property	15,000,000
	£227,000,000

This was equal to £70 per inhabitant.

There are thirty-seven life assurance companies, which have insured 48,500 lives for a total of £17,000,000, being an average of £348 each; the death-rate averaging 8 per 1000 annually. The fire assurances show a total of £81,000,000 of property insured.

RAILWAYS AND CANALS.

Canada boasts some of the noblest works of engineering. Before railways were known she constructed several fine canals.

1. Rideau, from Kingston to Ottawa, 132 miles, with forty-seven locks, cost £800,000, paid by Great Britain.

2. Welland, from Erie to Ontario, 41 miles, having 56 feet width and 8 depth, cost £1,400,000, say £34,000 per mile.

3. Grenville, from Rideau to Montreal, whereby a complete system of 460 miles of navigation is obtained to Niagara.

Also four canals of minor note. The traffic on all seven canals during the years 1872-1876 averaged as follows yearly:—

Vessels	27,400
Tonnage	3,510,000
Passengers	91,700
Tolls	£83,800

The traffic returns show a marked decline in consequence of the superior facilities offered by railways.

The existing canals represent an outlay of £6,500,000, and a further sum of £6,000,000 is being laid out in canalising the St. Lawrence from Lake Erie to Montreal, with facility for vessels of 1500 tons, drawing up to 14 feet. The lower part of the St. Lawrence has been made navigable for vessels of 4000 tons up to Montreal, 1000 miles from the sea, having been formerly practicable only for vessels of 400 tons.

The Grand Trunk Railway, built in 1847-60, is 1388 miles in length, and represents a total cost of £31,000,000; the average earnings are £2,000,000, but as working ex-

penses absorb 80 per cent, the net profit is barely 1¼ per cent on the capital. The goods traffic on this line has doubled in five years, viz.—

1872	2,220,000 tons
1877	4,354,000 „

The Great Western is of more recent construction, as well as others of less note; the total of lines in actual traffic being 5850 miles, which represent an outlay of £70,000,000, including £18,000,000 subscribed by the Canadian Government. Surveys for the Canadian Pacific railway occupied no less than seven years, including 11,500 miles of country actually measured, at a cost of £645,000 and thirty-four lives. The line starts from the west bank of Lake Superior, will cross the Rocky Mountains at Yellow Head Pass, 3646 feet over sea-level, and terminate at Port Moody; length 2010 miles, estimated cost £22,000,000. Already 400 miles are ready for traffic, and the line is to be finished by 1890.

Besides the railways there are 5500 miles of good post roads, the want of which so much retarded the growth of the colony in its early years, that Major Strickland (1826) describes a journey of fifty miles in Western Canada, taking three days to accomplish.

INSTRUCTION.

Canada ranks foremost among the countries of the world for the proportion of children attending school. Even so far back as thirty years ago it counted 1700 parish schools. At present the schools are attended by 700,000 children, and maintained at an annual expenditure of £1,000,000 sterling, say 30s. per pupil, or 5s. for each inhabitant, against 3s. in the United Kingdom.

The Press has made wonderful progress in sixty years. In 1816 Canada had 16 weekly newspapers, and no daily. In 1857 there were 243 between dailies and weeklies, and at present there are 447 papers, issuing 30 million copies yearly, a greater number than the United Kingdom printed fifty years ago.

SOUTH AFRICA.

Cape Colony was taken from the Dutch in 1806, since which time its progress has not been commensurate with that of either Canada or Australia, although it constitutes at present a very flourishing colony of Britain. By way of conquest we have extended our possessions in South Africa to an actual area of 367,000 square miles, and in this manner the population has risen from a handful of settlers to a nation of 2,000,000 souls:—

1806	74,000	inhabitants
1840	143,000	„
1861	420,000	„
1877	1,744,000	„

The colony consists of three distinct settlements, in two of which the British element predominates, and in the third the Dutch:—

	Area.	Population.
Cape	234,000 square miles	1,120,000
Natal	19,000 „	322,000
Transvaal	114,000 „	300,000
	367,000 „	1,742,000

The Transvaal was a republic of 50,000 Dutch farmers till its recent annexation in 1877; the bulk of the population consisted of 200,000 negroes. The principal features of the Cape and Natal are as follows:—

	Cape.	Natal.	Total.
White settlers . .	237,000	22,500	259,500
Imports . . .	£5,457,000	£1,167,000	£6,624,000
Exports . . .	£3,663,000	£690,000	£4,353,000
Gross trade . . .	£9,120,000	£1,857,000	£10,977,000
Revenue . . .	£2,932,000	£272,000	£3,204,000
Debt	£5,029,000	£1,232,000	£6,261,000
Tonnage arrivals . .	462,000	95,000	557,000

Comparing the white population with trade, there appears twice as much activity at Natal as at the Cape, the former averaging £80, the latter £40, per inhabitant.

The balance of trade is against the colony :—

Imports of ten years . .	£51,500,000
Exports „ „ . .	41,000,000
Surplus imports .	£10,500,000

The annual average against the colony is therefore about £1,000,000 sterling.

Cape Colony.

This territory comprises, besides the original Dutch settlement, the lands taken in the last twenty years from Kaffirs, Basutos, and Fingoes, the whole forming an area equal to France. The population, according to the census of 1875, is made up thus :—

Whites . . .	237,000
Coloured . . .	883,000
	1,120,000

In less than thirty years the white population has trebled, since in 1848 it numbered only 87,100 souls. The vital statistics show as follows :—

Birth-rate .	43	per 1000 inhabitants.
Death-rate .	21	„ „
Increase .	22	„ „

This is almost as high a rate of increase as in the Australian colonies, and double that of Canada. The marriage-rate is 13 per 1000, which is below the European average. Emigration to Cape Colony during the last seventy years has barely averaged 1000 per annum, although an extraordinary influx occurred in 1867-68, due to the discovery of diamonds[1] at Orange River, and since then every year has seen a fair number of settlers.

About fifty years ago Cape wines became so favourably known in England that the cultivation of the vine advanced with rapidity. In 1835-38 the vintage averaged 1,000,000 gallons, and ten years later the annual shipments exceeded 500,000 gallons; the wine best in repute being the Constantia, grown near Cape Town. While the area under vines extended, the wine lost favour in England, the shipments in 1863 having fallen to 300,000 gallons; the cheap French wine gradually supplanting that of the Cape to such a degree, that between 1867 and 1877 the average shipments hardly reached 80,000 gallons, worth £15,000 sterling. Nevertheless, the wine crop of the Cape has steadily risen to 4,500,000 gallons, of which 98 per cent is kept for home consumption. The average yield is 250 gallons per acre, worth about £25.

Grain crops cover nearly half a million acres, but the yield is so poor (from 5 to 10 bushels per acre) that the quantity raised is only sufficient for home consumption. It is, however, manifest that agriculture is progressing, as appears from comparing the returns for 1875 with those of ten years previous:—

[1] The highest price obtained for one of these diamonds was £11,000, for the "Stewart" diamond, weighing 288 carats, which was found in November 1872. It is the fourth largest in the world. The total value of diamonds exported was £12,000,000 sterling.

	1865.	1875.	Increase.
Grain, acres .	387,000	465,000	20 p. c.
,, crops .	2,440,000 bushels	4,180,000 bushels	72 ,,
Vineyards, acres .	16,200	18,200	12 ,,
,, crop .	3,240,000 gallons	4,485,000 gallons	36 ,,

The value of the grain and wine crops is £1,290,000, or £5 per head of the white population.

Public lands may be either bought at a shilling an acre, or rented from Government, the State deriving in this manner a revenue of £185,000 per annum, according to the average since 1874, and the annual appropriations to squatters or purchasers exceeding 1,000,000 acres. The Government has still 50,000,000 acres to dispose of, the lands already taken up being as follows:—

	Acres.
Agriculture . .	600,000
Pasture . .	17,500,000
Timber . .	10,000,000
Unoccupied . .	40,938,000
Area of farms .	69,038,000

Squatters' runs for cattle vary from 3000 to 10,000 acres, being much smaller than in Australia or the River Plate. The increase of cattle in thirty-five years has been prodigious, the numbers having multiplied five-fold.

	1840.	1875.
Cows .	307,000	1,329,000
Horses .	56,700	241,000
Sheep .	2,339,000	11,280,000
Goats .	394,000	2,790,000
Ostriches .	...	22,200

The above stock represents a value of £14,000,000, equal to £60 per head of the white population. Sheep-farming has sensibly declined in recent years, while ostrich-

farming and the care of Angora goats have increased, as shown by the Table of exports:—

	Average of 1871-72.	Average of 1876-77.	
Wool .	47,500,000 lbs.	35,500,000 lbs.	25 per cent less.
Ostrich feathers	26,200 „	62,700 „	140 „ more
Angora hair	606,000 „	1,378,000 „	130 „ „

The wool-clip varies from 3 to 4 lbs. per fleece, the average value being as 4s. from each sheep; whereas, in Australia, each sheep gives 6 lbs. wool, and produces in this manner 7s. to its owner. The sheep of the River Plate give less than 2s. per head, of wool.

Ostriches are now found a very lucrative business, as they are kept within fences, and no longer killed for their feathers, but plucked once a year. The feathers are worth from £6 to £50 sterling per lb., and the birds give about 3 lbs. each per annum. During the last three years the exportation of ostrich feathers has averaged £380,000 per annum; yet the business of ostrich-farming is only of recent adoption. The number of ostriches annually plucked is 32,000, yielding £12 each. Angora goats already number 800,000; the breed having been imported from Asia Minor about twenty years ago, and crossed with the Cape goats, of which there are 2,000,000. The Angoras thrive admirably,[1] and the clip averages 2 lbs. per head, the hair selling at 2s. per lb. In a short time this industry will rival that of sheep-farming.

Commerce and revenue have grown in ten years as follows:—

[1] These animals would probably do equally well in Tasmania and the Republic of Uruguay. A few have been introduced into the hilly country of Tucuman.

	1867.	1877.	Increase.
Imports .	£2,415,000	£5,457,000	120 per cent
Exports .	2,531,000	3,663,000	46 ,,
Gross trade .	4,946,000	9,120,000	84 ,,
Revenue .	899,000	2,932,000	225 ,,
Debt . .	1,102,000	5,029,000	350 ,,

The debt has been chiefly contracted for making four lines of railway, of which more than 500 miles[1] are already open to traffic. Taking only the white population, the debt averages £22 per head, or one-third of the value of their cattle. The revenue, in like manner, seems at first heavy—say £13 per white settler—but it must be borne in mind that the exports are nearly equal to it, being £11 per head.

Our commercial relations with the Cape are on the increase. In 1868 the trade with Great Britain formed 70 per cent of the total; in 1877 it rose to 75 per cent, being a much higher ratio than our dealings with Canada and Australia (see p. 182).

This colony possesses 56 vessels, of 6600 tons aggregate burthen—say 120 tons each. The tonnage of arrivals has doubled since 1848, being now 384,000 tons sea-going vessels, besides 525,000 tons coasting.

The telegraph system centres at Cape Town, and extends for 3800 miles. The cable laid down from Aden to the Cape of Good Hope now connects the colony with the rest of the world. Cape Town is a rising city of 33,000 inhabitants, with a fine pier, constructed in 1860, and a State library of 40,000 volumes.

NATAL.

This out-lying settlement was separated from the Cape in 1856, and comprises a limited area of 12,000,000 acres,

[1] The principal line is from Cape Town to Beaufort, 200 miles.

of which only two-thirds are occupied for tillage and pasture.

	Acres.	Crops.	Per acre.
Grain .	163,000	1,450,000 bushels	9 bushels
Sugar .	8,600	10,600 tons	1¼ ton
Coffee .	3,800	1,500,000 lbs.	400 lbs.

Most of the agriculture consists of Kaffir farms, the area of white farms covering only 31,000 acres. The population is also chiefly black, the whites forming only 6 per cent, say 22,500 souls. There are 93 schools, attended by 3400 children.

The colony has made the following progress in the last ten years:—

	1867.	1877.	Increase.
Imports .	£270,000	£1,167,000	350 per cent
Exports .	£226,000	£690,000	210 ,,
Gross trade .	£496,000	£1,857,000	270 ,,
Revenue .	£266,000	£272,000	2½ ,,
Debt . .	£213,000	£1,232,000	480 ,,
Tonnage arrivals	26,500	95,000	270 ,,

Natal has an important transit trade with the interior, both for imports and exports. The shipments of wool reach 10,000,000 lbs., the product of some 3,000,000 sheep, although the colony counts less than half a million.

The exports are as £30 per head of the white population.

This colony has still room for settlers. The Government has already disposed of 8,000,000 acres, and has 4,000,000 yet available for tenants or purchasers. The income from sale and renting of land in 1875 and 1876 averaged £17,700 sterling.

BRITISH POSSESSIONS.

THESE are so numerous that it will suffice to review the principal of commercial interest, viz.—

	Population.	Commerce.	Revenue.
India . .	194,384,000	£151,200,000	£61,000,000
West Indies .	1,098,000	12,100,000	1,290,000
Guiana . .	193,000	5,280,000	390,000
Mauritius .	348,000	6,560,000	748,000
Hong Kong .	124,000	9,200,000	184,000
	196,147,000	£184,340,000	£63,612,000

The above figures for India comprise not only Hindostan, but also British Burmah, Ceylon, and the Straits Settlement. The West Indies, in like manner, comprehend Honduras and Bermudas. It will be observed that the commerce of the above possessions is greater than that of our three colonial empires in Canada, Australia, and South Africa (see page 181), while the number of British settlers is infinitesimal. Each of the above possessions differs greatly from the rest, requiring us to consider them apart.

INDIA.

This vast empire was the property of the East India Company down to 1814, in which year the monopoly enjoyed by that Company was abolished. It was finally annexed to Great Britain in 1858, this epoch being marked by an improved system of government. The advance of British conquest in the last fifty years is shown as follows:—

	Area.	Population.
1830 . .	512,000 square miles	91,000,000
1861 . . .	886,000 ,,	134,000,000
1878 . .	934,000 ,,	194,000,000

This does not include 450 tributary States, whose Rajahs pay fealty to the Empress of India, their dominions covering 590,000 square miles, with 50,500,000 inhabitants. Thus British India really comprehends 1,500,000 square miles, with 245,000,000 of people, for the government of which we keep up a garrison of 65,000 men.

The census of 1871 shows that 67 per cent of the population live by agriculture: the average income of the peasants is 22 rupees, or £2 per annum, out of which they pay one rupee for their land. Rice, being their staple food, is universally cultivated, besides which they raise 200,000,000 bushels of wheat.

The total number of adult males in British India is 67,000,000, distributed as follows:—

	Male adults.
Agriculturists . . .	37,100,000
Farm-labourers . . .	8,200,000
Merchants	3,600,000
Artisans	9,300,000
Servants	4,150,000
Gentlemen . . .	5,100,000
	67,400,000

In the last forty years the face of the country has been completely changed by the construction of roads, irrigation works, and railways, involving an outlay of more than £100,000,000 sterling by London capitalists. This has naturally produced an extraordinary development of trade and products,[1] besides facilitating the peaceable administration of all the provinces.

[1] In 1835 the ordinary price of an elephant was £45; at present it ranges from £150 up to £800.

In 1830 there were no roads, no river steamers, and the only mode of travelling was on camels or elephants across country, or in boats on the great rivers. In 1836 the Calcutta and Delhi main highroad was begun; it was eventually carried out to Peshawur, a total length of 1420 miles, having cost £1,500,000 sterling. In 1842 was commenced the road from Bombay to Calcutta, 1170 miles, which cost £600,000; and another to Agra, 734 miles, which cost £250,000. In fine, the construction of roads from 1839-1849 cost £3,460,000.

The irrigation works are of more modern date, and have absorbed no less than £17,000,000. Some of the table-lands so irrigated are at a level of 3000 feet above the sea. The canals also lend facilities for internal navigation. The Bengal canal, 900 miles long and 10 feet deep, was opened in 1854; a few years later saw the completion of the Jumna, 580, and the Punjaub, 450 miles in length.

In the last twenty years a complete network of railways, over 7500 miles, has been constructed at a cost of £114,000,000 sterling, the progress being about a mile per day, viz.—

1861	1610 miles open
1865	3186 „
1878	7553 „

These lines carried in 1876 about 31 million passengers, and gave net profit of 4½ per cent on cost of construction. The grand trunk line from Calcutta to Delhi is 1000 miles in length. Previous to the making of railways and canals the products and trade of India were stagnant, but the progress of the last twenty years is marvellous.

The aggregate trade returns for India, Ceylon, and Singapore, since 1815 show an increase of fifteen-fold, viz.—

	Imports.	Exports.	Total.
1815 . .	£8,136,000	2,566,000	£10,702,000
1830 . .	5,679,000	4,087,000	9,766,000
1863 . .	57,200,000	60,900,000	118,100,000
1877 . .	67,900,000	82,975,000	150,875,000

Exports are usually £10,000,000 a year over imports, and all the chief products are increasing in the following manner :—

	1868.	1878.	Increase.
Opium . .	£12,330,000	£12,374,000	...
Rice and Grain .	3,780,000	9,790,000	150 per cent
Coffee . .	3,310,000	6,050,000	80 ,,
Tea . . .	730,000	3,062,000	320 ,,
Hides . .	988,000	3,757,000	275 ,,
Jute . . .	1,601,000	3,518,000	120 ,,
Sundries . .	20,461,000	37,365,000	66 ,,
	£43,200,000	£75,916,000	76 ,,
Cotton . .	20,100,000	9,384,000	decl. 53 ,,
Total . .	£63,300,000	£85,300,000	incr. 35 ,,

Trade has, moreover, been facilitated by the introduction of paper money in 1861, the emission rising to £5,000,000 in 1864, and at present exceeding £12,000,000. The coin mostly in use is silver, the Government having coined £40,000,000 of this metal in the last ten years, say £4,000,000 per annum. Previous to 1870 India used to absorb £20,000,000 of bullion, chiefly silver, every year, but since that date the influx of precious metals has fallen :—

	Amount.	Per annum.
1864-1870 . .	£138,000,000	£19,700,000
1871-1876 . .	53,000,000	8,770,000
1877-1878 . .	22,200,000	11,100,000

This is by some ascribed to poverty, partly resulting from famine, partly from the taxation having been increased 18 per cent in the last ten years.

The rise of public debt has been as follows:—

	Amount.	Per inhabitant.
1814 . . .	£18,000,000	5s.
1857 . . .	60,000,000	10s.
1862 . . .	100,000,000	15s.
1879 . . .	139,000,000	14s.

The service of the debt costs £5,500,000 per annum, or 9 per cent of the revenue; the latter averages 6s. per inhabitant.

The number of Europeans is very small, the returns of population for 1877 showing as follows:—

Hindoos	140,000,000
Mahometans . . .	41,000,000
Buddhists, etc. . . .	10,000,000
British troops . . .	65,000
„ civilians . . .	64,000
	191,129,000

The British are therefore less than 1 in 1000 of the population. The annual mortality among British troops in India was 69 per 1000 (say 7 per cent) previous to 1850; the improvements introduced by order of Parliament have reduced the rate since 1870 to 20 per 1000, which saves 3500 soldiers' lives yearly. In 1877 the rate was only 13 per 1000.

The annual expenditure for the garrison of white troops is £15,000,000, or £250 per soldier. In India there are at present 644 newspapers, of which 600 are published in the various vernacular languages—chiefly in Bengali, Urdu, Marathi, Gujarati, Tamil, and Telugu. There are 40 journals published in English. The universities of Calcutta, Madras, and Bombay educate 6000 youths, and there are also State schools in the various provinces. India has 17,900 miles of telegraph, constructed at a cost of £3,000,000 sterling.

The island of Ceylon has made wonderful progress during the last forty years as a field for coffee-planting. Numerous Englishmen have settled down there, whose estates cover an area of 255,000 acres, representing a value of £9,000,000 sterling, and producing over 100 million lbs. coffee. The production has multiplied thirty-fold since 1837, as shown by the export:—

	Export.	Value.
1837 . .	3 million lbs.	£98,000
1877 . .	104 ,, ,,	4,371,000

The average crop is about equal to £18 per acre, whereas in Brazil it does not exceed £16. The Government has already sold or granted 2½ million acres, and has still 12 million acres of Crown lands for settlers, the ordinary price being apparently £4 an acre. Large plantations of Cinchona, said to reach 50 million young plants, have been recently made; this will soon prove a valuable item for exportation, as the world consumes 10 million lbs. Jesuits' bark per annum. Cinchona was first introduced into India in 1861, and the Neilgherry plantations already count 3,000,000 trees over thirty feet in height.

HONG KONG.

This important island, which is hardly the size of the Isle of Man, is the entrepôt of commerce to the amount of £9,000,000 sterling, of which the trade with Great Britain forms two-thirds. No community in the world carries on so large a business compared with population, the census of 1876 showing as follows:—

British . . .	869
Other whites . .	1,867
Chinese . . .	136,408
	139,144

The shipping returns show that trade has more than doubled in ten years:—

	1866.	1876.	Increase.
Tonnage arrivals .	945,000 tons	2,180,000 tons	130 per cent

The revenue averages £180,000, or 25s. per head of the population.

Hong Kong, with a handful of people, carries on a greater commerce than some of the minor nations of Europe.

MAURITIUS.

Few parts of the world are more thickly populated than this island,[1] which is only one-fifth of the size of Corsica, and yet has a greater number of inhabitants. It was taken by Great Britain in 1810, the next event in its history being the emancipation of the slaves in 1838. These numbered 66,600, the average price of indemnity paid to their masters being about £25 each. In order to prevent an interruption of labour on the sugar estates, Coolies were already imported in 1834, and since that time the influx of these industrious settlers has been continuous.

The increase of population in fifty years has been as follows:—

	1827.	1877.
Whites .	8,000	11,000
Blacks .	86,600	92,000
Coolies .	...	246,000
	94,600	349,000

[1] The same proportion to the square mile would give us 62,000,000 inhabitants in the United Kingdom.

The growth of the sugar industry is shown as follows:—

	Acres under sugar.	Export of sugar.
1814	2,000	500 tons
1836	57,000	30,000 ,,
1877	160,000	136,000 ,,

The area of the island is 700 square miles, or 450,000 acres, most of which is under tillage.

Forest timber is of the most valuable description, this island producing the best ebony in the world. Mineral resources are not fully developed, the iron-mines being known to yield superior ores. A railway, 66 miles long, has been made across the island, to facilitate shipment of products.

There is a heavy balance of trade in favour of the island, the summary of imports and exports for ten years being as follows:—

Imports of ten years	£22,800,000
Exports ,,	29,850,000
Surplus of exports	£7,050,000

The increase of revenue has been greater than that of population, but less than that of trade.

	Revenue.	Per head.
1827	196,000	40s.
1877	748,000	43s.

The public debt amounts to £1,000,000 sterling.

Mauritius exports products worth £7 per acre of her extent, supports eighty inhabitants on every 100 acres, and has a balance of trade equal to £2 per inhabitant per annum.

CYPRUS.

This once famous island, annexed to the British Empire in 1878, promises to become of great importance as soon

as the Euphrates Valley railway be constructed, to open a direct route to India; the point of departure is to be Alexandretta, abreast of Cyprus, on the Asiatic shore.

The population is barely 200,000, of whom two-thirds are Christians, the rest Turks. Most of the island is held in farms of 70 acres, except the Tchifliks or big estates, which are eighty in number. The agricultural products are as follow :—

	Quantity.	Value.
Grain . . .	3,000,000 bushels	£525,000
Cotton . . .	1,250,000 lbs.	20,000
Silk cocoons . .	45,000 „	22,000
Wine . . .	450,000 gallons	40,000
Olive oil . . .	50,000 „	18,000
Tobacco . . .	15,000 lbs.	1,000
Wool . . .	330,000 „	15,000
		£641,000

About three-fourths of the above products are kept for home consumption, the total exports (including sponges and salt) not exceeding £175,000 per annum, or 17s. per inhabitant. In former times the island was much more productive, but industry has withered under the Turkish pashas. The production of salt is about 50,000 tons, or one-fourth of what it might be. There are 40 boats and 400 men engaged in sponge fishing: they take annually 7000 lbs. of sponges, worth £2600 sterling. The total trade, between imports and exports, is barely £300,000, and the arrivals of shipping at Larnaca average 46,000 tons per annum. There is but one road in the whole island, from Larnaca to Nicosia, which was in a very bad condition when the British took possession. The climate in the high grounds is healthy. Some of the farmers have flocks of sheep, the number of these animals reaching 750,000.

WEST INDIES.

Under this heading we may include not only the Antilles, but also Honduras and Bermudas :—

	Area.	Population.
Jamaica	4,190	506,000
Trinidad	1,750	110,000
Other islands . . .	6,880	457,000
Honduras . . .	7,560	25,000
	20,380	1,098,000

The abolition of slavery in 1834 inflicted such a blow upon the industry of the West Indies that it is only since the introduction of Coolies that the islands have begun to revive. The sums paid for the slaves to their masters varied in the different islands, but were supposed to be 45 per cent of their market value :—

	Slaves.	Sum paid.	Per head.
Jamaica . . .	311,000	£6,150,000	£20
Trinidad . . .	21,000	1,034,000	50
Barbadoes . . .	83,000	1,720,000	21
Other islands . .	166,400	3,368,000	20
	581,400	£12,272,000	£21

In ten years following the emancipation, as compared with ten years previous to 1834, it was found that sugar had declined 70 per cent, rum 60, and coffee 75 per cent. The importation of Coolies between 1850 and 1860 averaged 6000 per annum, which soon effected a revival of industry ; but this was followed by another period of depression, the exports and imports being now much less than fourteen years ago :—

	1863-64.	1876-77.	Decline.
Imports . .	£9,100,000 per annum	£5,430,000	41 per cent
Exports . .	7,810,000 „	5,840,000	25 „
Gross trade .	16,910,000 „	11,270,000	33 „

The balance of trade during the past ten years has been in favour of the islands, viz.—

	1868-1877.
Imports of ten years . . .	£54,900,000
Exports „ „ . . .	55,500,000
Surplus exports . . .	£600,000

Sugar is the chief product, and has fluctuated as follows :—

1830	220,000 tons
1863	140,000 „
1877	159,000 „

Although these colonies are the most backward in some respects, they have many favourable features. Their exports compared to population fall little short of the ratio in Great Britain; their taxation is light; their debt less than £1 per head; and public instruction is gradually improving the moral tone of the inhabitants.

The total population exceeds 1,000,000 souls, but the number of whites barely reaches 30,000, or 3 per cent.

Railways have been introduced; one line of 25 miles in Jamaica, another of 16 miles in Trinidad.

JAMAICA.

Although the largest of our West Indian possessions, this island is not quite one-tenth the size of Cuba. Previous to the emancipation it exported annually 100,000 hogsheads of sugar, 40,000 pipes of rum, and 10,000 tons of coffee, but at present the production is hardly one-third. Meantime the population has increased :—

	1824.	1871.	
Whites . . .	37,000	13,800	65 p. c. less
Coloured . .	322,000	492,400	53 „ more
	359,000	506,200	40 „ more

There has been a great improvement in the last ten years as regards trade, revenue, etc.; the more remarkable, as Barbadoes, Bahamas, and the Leeward Islands, have notably declined. If we compare the statistics of Jamaica in 1877 with those of 1867, we find as follows :—

	1867.	1877.	Increase.
Imports . . .	£859,000	£1,552,000	60 per cent
Exports . . .	£1,045,000	£1,459,000	42 ,,
Gross trade . .	£1,904,000	£3,011,000	56 ,,
Revenue . . .	£329,000	£533,000	60 ,,
Debt	£788,000	£633,000	...
Tonnage arrivals .	164,000 tons	351,000 tons	120 ,,

There has been, in the last ten years, a slight balance of trade against Jamaica.

	1868-1877.
Imports . . .	£1,495,000 per annum
Exports . . .	1,331,000 ,,
Surplus imports	£164,000 ,,

Notwithstanding the extreme fertility of the island, its exported products are very trifling compared with those of Mauritius.

	Jamaica.	Mauritius.
Exports for population . .	£3 per inhab.	£8 per inhab.
,, area	10s. per acre	£7 per acre

Sugar-planting does not progress, but is rather on the decline, as shown by the exportation.

1866	30,040 tons
1877	25,980 ,,

Taxation is low, say 21s., and the public debt 25s. per inhabitant.

The Crown holds 360,000 acres for sale, but the island is hardly propitious for immigration.

TRINIDAD.

This island is just the size of Norfolkshire, or little over 1,000,000 acres in extent. Its volcanoes of mud and lake of pitch remind us that it was detached from South America by some eruption in prehistoric times. Since its annexation to the British Empire in 1797 it has made considerable progress, especially in population.

1805	. . .	25,240 inhabitants
1834	. . .	43,678 ,,
1877	. . .	110,000 ,,

Sugar was first planted in 1787, and has long been the principal product. Some of the plantations were, however, abandoned after the emancipation of slaves. It was only upon the introduction of Coolies that agriculture revived, rising steadily every year, until the exports now average £20 per inhabitant, or seven times the ratio of Jamaica. The shipments in 1877, compared with ten years before, show thus :—

	1867.	1877.	Increase.
Sugar and molasses . .	£668,000	£973,000	45 per cent
Cocoa	189,000	281,000	50 ,,
Sundries	230,000	840,000	260 ,,
	£1,087,000	£2,094,000	96 ,,

The soil is luxuriant, about one-third of the island being cultivated. The principal crops are :—

Sugar	90,000 acres
Cocoa	120,000 ,,

Even the sides of the mountains can be cultivated to the very summits, and fine timber abounds.

None of our other West Indian possessions is progressing so favourably as Trinidad.

	1867.	1877.	Increase.
Imports	£859,000	£1,708,000	100 per cent
Exports	£1,087,000	£2,094,000	96 ,,
Gross trade	£1,946,000	£3,802,000	98 ,,
Revenue	£216,000	£310,000	44 ,,
Debt	£157,000	£178,000	14 ,,
Tonnage arrivals	140,000	306,000	120 ,,

The revenue is nearly £3 per head, but is only 3s. in the £ compared with exports, whereas in Jamaica the taxes are 7s. per £ of exports. The balance of trade for Trinidad in the ten years shows as follows:—

	1868-1877.
Imports of ten years	£12,810,000
Exports ,,	15,130,000
Surplus exports	£2,320,000

Thus the annual balance of trade in favour of the island is equal to £2 per inhabitant, the same ratio as in Mauritius.

The capital, Port of Spain, is one of the finest towns in the West Indies, with 20,000 inhabitants, and has a railway to the Pitch Lake.

Whites form about 10 per cent of the population, being a higher ratio than in the other islands.

BARBADOES.

This little island is the thickest populated and most productive spot in the whole world. Its area is only 106,000 acres, yet it supports 162,000 inhabitants, and exports products worth more than £1,000,000 sterling.

It has double the population per square mile of Mauritius, and four times that of Belgium or China. The exports, compared with area, are as £10 per acre, for, although much smaller than the Isle of Man, its exports exceed £1,000,000 sterling. The returns for 1877 show thus:—

	1877.
Imports	£1,144,000
Exports	1,098,000
Gross trade . . .	2,242,000
Revenue	121,000
Debt	25,100
Tonnage arrivals . .	191,000

The people are lightly taxed, say 15s. per head, and their exports average £7 per inhabitant, or more than double the ratio of Jamaica. The balance of trade for ten years shows as follows:—

	1868-1877.
Imports of ten years . . .	£10,985,000
Exports ,, . . .	11,190,000
Surplus exports . .	£205,000

This shows an average balance for Barbadoes of £20,000 a year.

The island is healthy, but subject to the most awful hurricanes. In one of these, some years ago, the Government House was blown down, the Governor saving his life in the cellar. The blacks no longer "incommode" the white settlers, but the number of the latter is now small. Education is making great advances, there being no fewer than twenty-three schools.

HONDURAS.

This insignificant possession in Central America has an area of 7500 square miles, inhabited by 24,700 Mexican cross-breeds. The trade is very trifling, and hastens to decay.

	1863.	1877.	Decline.
Imports . .	£266,000	£166,000	36 per cent
Exports . .	391,000	125,000	65 ,,
Gross trade .	657,000	291,000	54 ,,

The climate is bad, and the place seems no longer to export mahogany. For all practical purposes the British Empire gains nothing by a possession like this, where even the natives are deterred by the snakes and mosquitoes.

GUIANA.

This territory, on the South American continent, is larger than England, but has only 200,000 inhabitants. It is simply a large sugar-plantation, producing 100,000 tons yearly, or almost as much as the whole of the West India Islands. It has made great strides since the introduction of Coolies in 1853, the number of these settlers being now 40,000.[1] The progress of the last ten years has been as follows:—

	1867.	1877.	Increase.
Imports . .	1,499,000	2,230,000	50 per cent
Exports . .	2,366,000	3,049,000	30 ,,
Gross trade .	3,865,000	5,279,000	35 ,,
Revenue . .	275,000	390,000	40 ,,
Debt . .	661,000	324,000	...
Tonnage arrivals	160,000	260,000	62 ,,

The white population is about 6000, or 3 per cent of the total. A railway of 21 miles has been constructed, and the sugar-planters seem prosperous. But for the climate Guiana might serve for a colony, the low grounds being most unhealthy, while the soil is highly fertile.

When the British Parliament, in 1834, voted £21,000,000 to emancipate the slaves, the planters in Guiana were more fortunate than those of Jamaica, for the former obtained £52 per head for their slaves, or more than double the rate paid in the West India Islands. The

[1] These Coolies return to India or China, after a few years, with their earnings. Some time since a vessel arrived at Calcutta with 460 of them, bringing back a collective sum of £11,300 sterling.

slaves in Guiana numbered 82,000, and the sum paid for them was £4,295,000 sterling. At present the Coolies work so well that the exports are equal to £15 per head of the population.

The balance of trade since 1868 shows as follows:—

	1868-1877.
Imports of ten years .	£18,700,000
Exports ,, . .	25,300,000
Surplus exports .	£6,600,000

This is an average of £660,000 per annum in favour of Guiana, which may be taken as the annual increase of wealth.

PART III.

FRANCE.

AMONG the nations of the European continent there is none that equals France in commerce, manufactures, agriculture, or public wealth. The progress which she has made since the fall of Charles X., barely fifty years ago, is very remarkable, and may be seen at a glance, thus:—

	1830.	1878.
Agricultural products .	£186,000,000	£377,000,000
Manufactures . . .	78,000,000	416,000,000
Commerce . . .	47,000,000	368,000,000

In spite, however, of her industrial advancement, there are certain signs of physical and moral decline, which have not escaped the notice of French statesmen. The population does not increase, although emigration has been on a very small scale; no fewer than 26 Departments showing an excess of deaths over births. Married people have diminished 11 per cent since 1821, and illegitimate children increased 15 per cent.

	1817-1821.	1872-1874.
Married persons .	55 per cent of pop.	49 per cent of pop.
Illegitimate births	66 per 1000	76 per 1000

The birth-rate has fallen by one-fifth, infanticide has doubled, and the rate of insanity has quadrupled; this last being, doubtless, the cause of the increase of suicide.

	1817-21.	1872-75.
Birth-rate .	32 per 1000	26 per 1000
Infanticide .	98 per 1,000,000	204 per 1,000,000
Insane .	580 ,, ,,	2420 ,, ,,
Suicide .	69 ,, ,,	141 ,, ,,

On the other hand, the school-population has doubled, as well as the number of adults able to read and write; and the annual criminal records of fifteen years (1851-1865) showed a decline of 26 per cent in the number of convictions, as compared with thirty years before. Moreover, it must be noted, that although the ratio of married people is declining, it is still much higher than in any other country in Europe (see page 6); and however the rate of insanity has risen, it is considerably lower than in Ireland or Scotland. It is true that 20 per cent of the conscripts are rejected by the army-surgeons, but the ratio in Italy is about the same. It is also true that the agricultural population is falling with wonderful rapidity, but the products of the soil are increasing in quantity and value. It is true that the public debt and taxation have multiplied enormously since the fall of Charles X., but the wealth of France has grown far more, and the accumulations (see page 43) per annum have in recent years exceeded even those of Great Britain, according to the official returns of legacy-duty in both countries.

FRENCH AGRICULTURE.

France is one of the best cultivated countries in Europe, and yet she does not raise enough of food for her own population. Although "property in land is the most active instigator to incessant labour," the result of peasant proprietors in France is nowise comparable with what is obtained under the landlord system in England. In 1793 the estates of the nobles and clergy were confiscated, to the value of £140,000,000 sterling, and divided among the peasants. The spoliation had some good effects, the special committee appointed by Louis Philippe in 1840 reporting that the people were better fed, better clad, and

better housed than before. In process of time, however, the subdivision of property has gone on to such a degree that there are 1,134,000 land-owners exempted from tax on the plea of "paupers." The distribution of lands is as follows:—

Estates.	Number.	Average extent.	Area.
First class .	154,000	320 acres	48 million acres
Second ,, .	636,000	50 ,,	32 ,,
Third ,, .	620,000	20 ,,	12½ ,,
Fourth ,, .	1,816,000	6 ,,	10½ ,,
	3,226,000	32 ,,	103 ,,

The first class own a large portion of forest and waste lands, some of them also letting portions of their estates to tenant-farmers, who number 853,000, holding an average of 30 acres each. The second class of proprietors are as flourishing as any body of farmers in Europe, and the third class are no less remarkable for thrift and industry. The fourth class are just able to make a living, but constantly tending downwards by subdivision to the cottier class already alluded to, who are not included in the above categories. These cottiers are about 1,500,000, owning barely an acre each, and supporting their families by the wages they earn as day-labourers.

Meantime the subdivision of land has already begun to bring about its own remedy, the agriculturist population having diminished 3,500,000 since 1851.

	Rural population.	Proportion of population.
1851 . . .	21,922,000	62 per cent
1861 . . .	19,873,000	53 ,,
1872 . . .	18,513,000	52 ,,

This decline is also in a measure due to the introduction of machinery, in which respect wonderful progress has been made in our own time. Forty years ago it was not uncommon to see horses treading out grain, as we used to do

in England in the days of King John. In 1872 France had 101,000 threshing-machines, of which 2850 were worked by steam-power. It is therefore by no means surprising to find that agriculture has improved in the following manner :—

	1820-1830.	1865-1875.	Increase.
Wheat .	13 bushels per acre	16 bushels per acre	23 p. c.
Maize .	11 ,,	18½ ,,	68 ,,
Barley .	14 ,,	21½ ,,	53 ,,
Oats . .	16½ ,,	27 ,,	63 ,,

The average yield of wheat was five-fold and a half in the first period, and seven and a third in the second. The introduction of machinery has also led to an extended acreage under cultivation; thus, in the twelve years from 1863-1875, there was an increase of 16 per cent in the area under wheat, and of 23 per cent under other cereals. The progress made in the last three-quarters of a century has been as follows, in millions of bushels :—

Annual average.	Wheat.	Oats, rye, etc.	All grain.	Bushels per inhab.
1800-1820 .	120	270	390	14
1825-1835 .	150	310	460	14
1860-1876 .	265	450	715	20

The increase, however, has no more than kept pace with the consumption, as the people are now better fed than forty years ago. In spite of the fertility of the soil and the industry of the people, France has never raised sufficient grain for her population (unless in exceptional years), as appears from the following returns :—

1801 to 1849.	Value.
Grain imports of 24 bad years . . .	£35,000,000 sterling
,, exports of 24 good years . . .	9,000,000 ,,
Balance against France	£26,000,000 ,,

	1866 to 1877.	
Imported . . .	9,725,000 tons	£108,000,000
Exported . . .	1,592,000 „	17,000,000
Balance against France . . .		£91,000,000

This shows that in the first half of the century France paid on an average £550,000 per annum for foreign grain, and in the last twelve years no less than £7,500,000 per annum. Meantime, if the yield of wheat per acre were up to the English average of 28 bushels, the crop would be 484 million bushels, or 224 million over the requirement for home-consumption. Nor is it merely grain that France needs from abroad; the importation of meat was small a few years ago, only 2500 tons in 1861, but France now imports over 12,000 tons yearly. In the last three years the value of food imports has averaged £34,000,000 per annum, and every year it is higher.

The wine crop increased 50 per cent in half a century, as shown in the following Table :—

	Gallons.	Value.
1820-1840 . . .	790,000,000	£32,000,000
1848-1868 . . .	990,000,000	40,000,000
1869-1878 . . .	1,234,000,000	50,000,000

In 1874 the maximum of cultivation was reached, the area under vines being 6,150,000 acres, but since then the ravages of the Phylloxera have caused 450,000 acres to be pulled up, and planted with beet-root or potatoes. The wine crop averages 213 gallons per acre. About 200 million gallons are used for making brandy, vinegar, etc. and 100 millions are exported, leaving for home consumption 25 gallons per inhabitant.

Beet-root was introduced by Buonaparte, and this industry has thrived on the premium of £1,200,000 sterling yearly, which the country pays to the beet-manufacturers.

In 1842 it was proposed in the Legislature to pull up the beet-plantations and pay the owners £1,500,000 indemnity, but the bill was unfortunately thrown out. It is, however, admitted that the cattle in the beet districts give 800 lbs. of meat, or 20 per cent more than in the rest of France. The cultivation has quadrupled since 1860 :—

	1860.	1877.
Beet crop . . .	1,250,000 tons	6,000,000 tons
Area under beet . .	490,000 acres	982,000 acres

The production per acre has doubled, and the value of the crop is now about £11,000,000 sterling.

Flax occupies 440,000 acres, the crop averaging 50,000 tons. Tobacco is no longer cultivated on a large scale, but yields about 8000 tons. The hop crop averages 2000 tons, the yield being equal to £60 an acre. The returns of olive oil show 12,000 tons, worth £5,000,000 sterling, and an equal sum is represented by the cider crop, say 220 million gallons. The produce of the silk-worms is estimated at £2,500,000 per annum, and that of the bees is close on £1,000,000, comprising 10,000 tons honey and 2500 tons wax.

Meadow and fallow together occupy one-third of France, the same as thirty years ago, but there is more meadow and less fallow now than in 1848. Moreover, in that interval 9,000,000 acres of waste land have been reclaimed, chiefly for plantation; forests now cover 4,000,000 acres more than in 1866, owing to the demand for firewood. Paris alone burns the timber of 50,000 acres yearly, and hence requires 1,000,000 acres to keep up a constant supply. The forest area exceeds 22 million acres, and the product averages 6s. per acre.

The improvement in tillage has been accompanied by a decline in farm-stock, viz.—

	1866.	1876.	Decline.
Horses . . .	3,312,000	3,033,000	9 per cent
Cows . . .	12,733,000	11,315,000	11 „
Sheep . . .	30,386,000	23,674,000	22 „
Pigs and goats .	5,790,000	7,692,000	...

Nevertheless the increased value of dairy products compensates in some degree for the above loss; in 1842 each cow earned 33s. per annum with milk and butter; in 1874 the proportion had risen to 135s.

The medium price of land for purchase or renting is as follows:—

	Purchase.	Rent per annum.	Interest on cap.
Tillage	£88 per acre	56s. per acre	3¼ per cent
Meadow	135 „	88s. „	3⅓ „
Vineyards . . .	106 „	82s. „	4 „

It would appear that the price of land is much above its fair value, if we are to judge by the fact that the Government valuation on 77 million acres under cultivation is only £1,860,000,000, or £24 per acre.

The agricultural capital of France has risen over 50 per cent since 1824, viz.—

	1824.	1876.
Lands . . .	£1,386,000,000	£1,860,000,000
Cattle, crops, etc. .	322,000,000	730,000,000
	£1,708,000,000	£2,590,000,000

The total mortgages on rural property do not exceed £150,000,000, of which one-half has been advanced since 1866 by the Credit Foncier and Credit Agricole.

FRENCH MANUFACTURES.

At the beginning of the century the manufacturing industry amounted to £6,000,000 sterling, of which silk stood for one-half. In 1874 the total was £416,000,000, as follows:—

	Operatives:	Product.
Textile factories . . .	770,000	£137,000,000
Flour mills	120,000	80,000,000
Clothing	156,000	52,000,000
Shoes and leather . . .	300,000	36,000,000
Soap, candles, etc. . . .	100,000	30,000,000
Sugar and liquors . . .	70,000	26,000,000
Furniture, jewellery, etc. . .	90,000	19,000,000
Metals and minerals . .	330,000	36,000,000
	1,936,000	£416,000,000

Textile fabrics, which now employ 2800 steam-engines and 9,500,000 spindles, have almost trebled in thirty years, viz.—

	1842.	1874.	Increase.
Woollens . .	£13,000,000	£48,000,000	270 per cent
Silks	12,000,000	36,000,000	200 „
Cottons . . .	11,000,000	20,000,000	80 „
Linens . . .	10,000,000	12,000,000	20 „
Lace, etc. . .	9,000,000	21,000,000	130 „
	£55,000,000	£137,000,000	150 „

Woollens.—The first machinery for spinning wool was put up at Rheims in 1809, that city now containing 330 factories. Down to 1830 France consumed only her own clip, say 80 million lbs., but since then the importation of wool has increased steadily, this being now the foremost of her manufactures.

The actual consumption is close on 400 million lbs., two-thirds being imported, but as it is mostly River Plate wool, of which 70 per cent is grease, the product of the mills is only four-fifths of the manufacture of Great Britain, with the same nominal quantity of wool. France has 2424 mills, of which 740 are worked by steam, with a total of 3,000,000 spindles. The increase in half a century is shown thus :—

	Wool consumed.	Manufactures.	Exports.
1830	96,000,000 lbs.	£10,000,000	£1,100,000
1877	390,000,000 ,,	48,000,000	13,200,000

The industry shows healthy symptoms of unabated increase.

Silks.—Previous to the French Revolution, Lyons had 15,000 silk factories, but in 1800 there were only 3500 left. The industry, however, revived so rapidly that Lyons now consumes one-sixth of the silk crop of the world, say 20,000 tons of cocoons, or 1500 tons of silk, of which more than one-half is imported from Lombardy and the East. The native production of silk cocoons rose from 11,100 tons in 1830-1832 to 25,200 in 1850-1852, but an epidemic in 1854 carried off three-fourths of the worms, and the actual production is barely 10,000 tons. The statistics since 1830 show as follows:—

	Manufactured.	Exported.
1830 to 1832	£5,230,000	£1,310,000
1842 to 1846	12,700,000	5,260,000
1870 to 1873	37,000,000	19,050,000
1876 to 1877	29,000,000	11,020,000

The decline since 1873 is because of the competition in Russia, Germany, and other countries formerly supplied from France.

Cottons.—This industry has shown the greatest development in recent years, the number of spindles having doubled since 1854, and the consumption of raw cotton being now one-fourth that of Great Britain. The progress since 1820 has been as follows:—

1820 to 1830	70 million lbs.	per annum
1865 to 1866	220 ,,	,,
1876 to 1877	328 ,,	,,

The value of imported and exported cotton manufactures is equal, so that France makes just enough for her

own needs. There are 2394 factories, of which 1220 are moved by steam, the number of spindles being 5,000,000.

Linens.—The manufacture is one-third more than the home consumption, and has increased thus:—

	1830.	1875.
Raw material .	£2,400,000	£3,800,000
Manufactures .	7,610,000	12,000,000

The factories have nearly 1,000,000 spindles, and consume 70,000 tons of flax annually.

Lace.—There are 390,000 women engaged in this manufacture, which amounts to £3,500,000 per annum, say £90 a head for the workers. Hosiery is another minor industry, the value of which is estimated at £8,000,000 sterling.

Gloves are made to the value of £3,000,000, and hats and bonnets £2,000,000 per annum, occupying over 24,000 operatives, and 6300 establishments.

Distilleries.—The increased production of brandy in recent years has given such impetus to this industry that in 1876 there were 3500 distilleries which produced annually

From wine . .	9	million gallons	spirit
,, corn and potatoes	2	,,	,,
,, beet-root . .	7	,,	,,
,, molasses, etc. .	16	,,	,,
	34	,,	,,

To this must be added 9,000,000 gallons distilled by the peasantry, making in all 43,000,000 gallons. The average exportation of brandy from 1871 to 1877 has been 10,000,000 gallons, worth £3,500,000 sterling per annum.

There are also 3200 breweries, which make 160,000,000 gallons of beer, worth £8,000,000; and the annual production of cider is 220,000,000 gallons.

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Sugar.—This industry, as already mentioned, causes a loss of £1,200,000 sterling per annum for bounties to the refiners. There are 510 factories, producing annually 450,000 tons of beet and 180,000 tons of refined cane sugar, the production of beet sugar having increased six-fold in thirty years.

1840-1850	. . .	66,000 tons per annum
1860-1870	. . .	188,000 ,, ,,
1872-1877	. . .	395,000 ,, ,,

France produces one-third of the beet sugar of Europe.

Leather.—The business of tanning has taken such extraordinary development in the last few years, that it now reaches £16,000,000 per annum. There are 203,000 bootmakers and 112,000 manufacturers of wooden shoes, whose labour yields £21,000,000 per annum.

Soap and Candles.—Over 200,000 tons of soap are made yearly, and this item, along with candles, makes up £30,000,000 sterling.

Watches and Jewellery.—There are 15,000 clock makers in Besançon, who turn out 400,000 clocks and watches yearly, worth £1,300,000 sterling. There are 3200 jewellers in Paris, who give employment to 18,000 operatives, and consume annually £2,000,000 sterling of gold and silver. These industries make up about £6,000,000 sterling.

Export of Manufactures.—The total value of manufactured goods exported has averaged in the last eight years £73,500,000, so that the home consumption has been over £300,000,000 per annum, or £8 per inhabitant.

Steam Power.—The increase under this head affords a key to the growth of the manufacturing industries:—

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	Engines.	Horse-power.
1840	2,803	56,400
1850	6,164	186,300
1860	17,571	523,800
1870	32,827	871,200

The latest estimates give a total of 1,600,000 horse-power, or second to England among European nations.

MINERALS AND METALS.

These industries, which were insignificant in the time of Buonaparte, now amount to £36,000,000 per annum.

The greatest development, strange to say, has taken place since the removal of the oppressive tariff against English coal and iron.

Coal.—In 1836 there were 170 coal-fields, employing 24,000 miners, who raised annually 3,000,000 tons, worth £1,200,000. At that time the supply of coal from England averaged 1,000,000 tons. But, with the introduction of railways, an increased consumption imparted vigour to the home production, as also to the imports, which have grown as follows :—.

	Native coal.	Imported.	Consumption.
1830-1840	2,700,000 tons	900,000 tons	3,600,000 tons per an.
1860-1865	10,200,000 ,,	7,300,000 ,,	17,500,000 ,, ,,
1875-1877	17,100,000 ,,	7,600,000 ,,	24,700,000 ,, ,,

The number of coal-fields now working is 623, which employ over 100,000 men. The value of coal raised is little short of £10,000,000 per annum.

Iron.—Prohibitory duties upon foreign iron obliged people to extract it from the mines at double the cost for which English iron might have been imported. During many years the average price of iron in France was £26 a ton, or three times the price then ruling in England (£9 : 10s.) In this manner the farmers and others lost £1,500,000 sterling per annum for about thirty years, say

£45,000,000. In fact, iron was so dear that the peasants used wooden ploughs until 1840. The production of iron rose to its highest in 1860-64, but it has since fallen away one-fourth.

1820-25	. . . . .	80,000	tons per annum
1840-45	. . . . .	150,000	„ „
1860-64	. . . . .	1,530,000	„ „
1871-75	. . . . .	1,170,000	„ „

There are over 2000 iron mines and 1100 furnaces (including 600 blast-furnaces), employing 120,000 workmen. The production of steel averages 260,000 tons per annum. The various branches of this industry, from the extraction of the ore from the mines to the finer classes of cutlery, represent more than £20,000,000 sterling per annum. France produces one-fourth of the quantity of iron that England does.

Lead.—This metal was imported, although known to exist in France, until about fifty years ago, when some quantities were extracted. In 1839 there were forty mines, producing in the aggregate a value of £22,000 sterling, and employing 900 workmen. In late years the industry rose, until 1860-64, when the average yield was 86,000 tons lead, but the production since 1871 has been under 70,000 tons yearly.

Copper.—Another metal that was utterly neglected for half a century. In 1839 there were two mines, employing 130 men, who produced 90 tons copper.

The returns since 1860 may be summed up thus:—

1860-64	. . .	54,000	tons copper ore per ann.
1871-75	. . .	108,000	„ „

The ore is of inferior kind, say 5 per cent copper, since it takes 20 tons ore to produce one ton of copper. France produces 6 per cent of the copper of the world.

Quarries. — There are 24,000 in the various Departments, employing altogether 88,000 workmen, and yielding about £2,000,000 per annum.

Salt.—For an interval the duties were removed, and the consumption rose to 1,000,000 tons yearly, but when they were re-imposed the consumption fell to 100,000 tons, on which the State levied the enormous tax of £18 per ton. This industry, under modified duties, has so far recovered, that it now employs 24,000 workmen, who produce 350,000 tons per annum, valued at £400,000.

COMMERCE.

As in many other countries, trade was almost stagnant for the first forty years of this century. The introduction of railways, between 1840 and 1850, gave a wonderful impulse, which was, however, greatly surpassed by the effects of free trade, initiated by Cobden and Napoleon III. in 1860. The official Tables show the average trade to have risen as follows:—

Average.	Imports.	Exports.	Total.
1826-1830 .	£23,000,000	£24,000,000	£47,000,000
1837-1841 .	39,000,000	38,000,000	77,000,000
1853-1857 .	89,000,000	92,000,000	181,000,000
1865-1868 .	145,000,000	161,000,000	306,000,000
1874-1877 .	184,000,000	184,000,000	368,000,000

The railway period—say from 1837 to 1857—saw an average increase of £6,000,000 sterling. The epoch that has elapsed since Cobden's treaty has seen the trade of France double in sixteen years.

The balance of trade for the last ten years shows only £40,000,000 against France, or £4,000,000 per annum, say 1 per cent on the gross trade.

The importation of specie (see page 31) in the same

period has been exactly double the exportation, leaving a surplus of £136,000,000.

The growth of the mercantile fleet has been nowise in keeping with that of the commerce, and, as a consequence, French trade is passing into the hands of foreign shipowners. It is possible that the severe law of maritime conscription acts prejudicially on the merchant marine. Entries in French ports show as follows:—

	French:	Foreign:	Proportion of French.
1832 .	451,000 tons	680,000 tons	40 per cent
1866 .	2,070,000 „	3,410,000 „	38 „
1876-77	2,850,000 „	6,130,000 „	31 „

Meantime, the tonnage of vessels bearing the French flag has fluctuated as follows:—

	Tons.
1827 . . .	710,000
1841 . . .	590,000
1862 . . .	983,000
1877 . . .	1,011,000

In fact, France has made little or no advance in the last fifteen years, while the merchant navies of England, Norway, Italy, and Germany have grown 30 or 40 per cent. There is, however, one sign of improvement—the proportion of steamers to the total marine of France has risen from 8 per cent in 1862 to 33 per cent in 1878.

Fisheries constitute an important branch of industry.

In 1816 the Government decreed a bounty of £2 per man annually for all engaged in deep-sea fishery. This was increased in 1829 to 72s. per ton for each vessel engaged in whale-fishing, a bounty being also given for cod-fishing. The fish was often used for manure, and the Minister of Commerce declared that the bounty cost the State £72 per head for the fishermen.

The average result of 1874-75-76, as compared with

the Report just published (Sept. 1879) for the past year shows as follows :—

	1874-76.	1878.	Observation.
Fishing vessels .	20,810	21,992	6 per cent increase
Tonnage of do. .	153,500	164,000	7 „ „
Hands on board .	79,530	82,431	4 „ „
Sale of fish . .	£3,190,000	£3,480,000	9 „ „

The home-fishery has doubled since 1850, viz.—

	1850.	1878.
Tonnage . .	59,320	109,000
Men . . .	48,492	70,650

The cod-fishery in 1878 produced 29,000 tons fish, the herring and mackerel also 29,000 tons. In the home fishery there are but $1\frac{1}{2}$ tons shipping for each man, but in the deep-sea the average is $4\frac{1}{2}$ tons per man. The result averaged in the last five years has been :—

	Value:	Per man.
Home fishery . .	£2,590,000	£37
Deep-sea do. . .	650,000	50
Total . . .	£3,240,000	£40

RAILWAYS AND CANALS.

The first railway worked by steam in France was (1828) the St. Etienne line, which had been worked by horses for half a century previous. The construction of railways was not at first so rapid as in some other countries, until the accession of Louis Napoleon, in whose reign 8500 miles were opened to traffic. The growth of railways in the last twenty-five years has been thus :—

	Miles in traffic.	Net earnings per mile.
1853 . .	2,450	£1050
1863 . .	7,400	1090
1878 . .	13,150	1400

These lines have cost £430,000,000 sterling — say £32,800 per mile — the highest average of any country except England. They carry monthly 12 million passengers, or one-fourth the number in England, and 5,000,000 tons merchandise. The yearly receipts are £35,000,000, and working expenses 48 per cent, leaving a net profit of £17,000,000, or 4 per cent on the cost of construction.

Comparing French and English railways, the account stands thus :—

	English.	French.
Miles open	17,333	13,150
Cost per mile	£40,200	£32,800
Passengers per annum	630,000,000	140,000,000
Merchandise	240,000,000 tons	62,000,000 tons
Receipts per mile	£3,640	£2,700
Expenses	£1,920	£1,300
Profits	£1,720	£1,400
Dividend on capital	4¼	4 per cent per annum

Some of the most valuable French lines will soon become State property, on the expiration of the term of their concession. Internal traffic, even before the construction of railways, was better attended to in France than in most Continental nations. The returns for 1836 show as follows :—

Highroads	44,000 miles
Bridges, No.	1,663
Navigable rivers	5,200 miles
Canals	2,300 „

"The highroads are usually 46 feet wide, bordered on each side by rows of trees. The bridges are of stone, except 93 of wood and 85 of iron." The Government spends £1,500,000 sterling per annum on roads and bridges, which are all free of toll.

The principal canals are as follow :—

	Miles.	Cost.
Nantes and Brest . .	240	£1,760,000
Rhone and Rhine . .	220	1,120,000
Berry	180	1,050,000
Languedoc	160	680,000
Burgundy	158	2,220,000
Loire and Briare . . .	124	1,280,000
Nivernais . . .	110	1,290,000
Somme	100	520,000
66 smaller canals . . .	988	6,750,000
	2300	£16,670,000

The Languedoc, constructed by Riquet, under Louis XIV., is said to be the finest canal in Europe as an engineering work. It was completed in 1668, being carried up to a height of 600 feet by means of 114 locks. It is 60 feet wide and 6½ deep, affording transit for small vessels between the Mediterranean and the Bay of Biscay. The Briare opens communication between the Loire and Seine, and was thirty-seven years in construction (1605-1642). The Central Canal connects the Loire and Saone, 72 miles, completed in 1791, at a cost of £6300 per mile, being carried to a height of 240 feet by means of 81 locks, and navigable for vessels of five feet draught. The Canal de Besançon connects the Rhine and Rhone. The latest work of this description is the Burgundy Canal, connecting the Rhone and Seine, finished in 1832.

Internal navigation has increased in spite of the railways, the canals now carrying 19½ million tons yearly, or one-fourth more than in 1845-50.

INSTRUCTION.

Fifty years ago France was one of the most backward countries in popular education: to-day she is one of the most advanced.

The progress made in fifty years is shown as follows:—

	1830.	1878.
School-children .	7 per cent of pop.	13 per cent of pop.
Adults who can read	36 ,, ,,	70 ,, ,,

The ratio of adults of various classes who can read, shows that less attention is paid to the education of women than of men:—

	Can read.	Cannot read.
Of men . .	73 per cent	27 per cent
,, women .	67 ,,	33 ,,
,, soldiers .	77 ,,	23 ,,
,, sailors .	86 ,,	14 ,,

The progress of the schools may be marked by the number of conscripts who could read:—

		Relative annual increase.
1827 . .	38 per cent	
1836 .	49 ,,	3 per cent per annum
1864 .	65 ,,	1 ,, ,,
1875 .	79 ,,	2 ,, ,,

France is not yet on a level with England either as regards the number of children attending school, or the proportion of adults who can read.

	England.	France.
School-children .	15 per cent of pop.	13 per cent of pop.
Adults who can read	74 ,, ,,	70 ,, ,,

The official statistics of the French schools in 1840, compared with 1878, show as follows:—

	1840.	1878.	Increase.
No. of schools .	55,930	73,110	31 per cent
Children . .	2,882,000	4,980,000	73 ,,

The annual vote for schools is only £800,000 sterling, say fivepence per head of the population, or 4 francs for each child attending school; this is less than one-ninth of the average cost in England.

In 1848 there were 107 public libraries, containing 4,000,000 volumes, France occupying in this respect the second rank, and possessing one-fifth of all the books in the public libraries of Europe. At present there are 350 free libraries, or more than three times the number she possessed thirty years ago; and they contain an aggregate of 6,800,000 volumes.

The number of literary and scientific associations is one-third more than in the United Kingdom.

In Paris . . .	43
,, Lyons . . .	9
,, Marseilles . . .	5
,, Bordeaux . . .	5
,, small towns . .	116
	178

The aggregate of members may be estimated from 50,000 to 70,000 persons.

Forty years ago the Press of Paris was the first in Europe, owing to the paper-duties in England acting so prejudicially on journalism in this country. The statistics for 1840 showed :—

	Papers.	Daily issue.
Paris . .	27	90,000 copies
London .	9	46,000 ,,

Since the repeal of the paper-duty the Press of England has left that of France far behind, although some of the Parisian journals[1] have a larger daily issue than those of London or New York. The average of new books annually published in France is over 7000, or three times as many as in England, and inferior only to Germany.

[1] The *Petit Journal* circulates 565,000 copies daily.

BANKS.

The Bank of France has the sole right of emission, the limit since 1872 being £128,000,000 sterling, and the specie reserve averaging £85,000,000. The business has expanded prodigiously in the last twenty years. From 1860 it may be summed up thus (average per annum):—

	1860-1870.	1871-74.	1875-79.
Discounts . .	£239,000,000	£488,000,000	£340,000,000
Rate . . .	4 p. c.	5 p. c.	3¾ p. c.
Specie reserve .	£30,000,000	£36,000,000	£82,000,000
Notes in circulation	44,000,000	91,000,000	106,000,000

The following shows the maximum and minimum of the above items:—

	Date.	Amount.
Discounts, maximum . .	1873	£584,000,000
,, minimum . .	1860	203,000,000
Rate, maximum . . .	1864	6½ p. c.
,, minimum . . .	1868-69	2½ p. c.
Specie reserve	1876	£87,000,000
,, minimum . . .	1864	6,000,000
Notes, maximum . . .	1873	123,000,000
,, minimum . . .	1861	28,000,000

This bank was founded by Napoleon in 1803, since which time it has been twice obliged to suspend specie payments. In the war of 1870-71 it lent £60,000,000 to the Government. It has eighty-nine branches in the principal cities of France. The dividend has declined in recent years from 32 to 12 per cent. Such was the inflation of business in 1873 that the bank discounts were 57 per cent over the aggregate import and export trade, but since 1876 they seldom reach £300,000,000, or three-fourths of the gross trade of France. There are twenty-one joint-stock banks, with a capital of £16,250,000, besides twenty-six private banks in Paris, and others in the Departments. The Credit Foncier, established in 1852,

has a capital of £3,600,000, with power to emit debentures up to £72,000,000; the returns in 1873 showed an issue of nearly £35,000,000, and a reserve fund of £840,000.

	Issue.	Mortgages.	Average mortgage.
1856 . . .	£3,050,000	1,390	2100
1866 . . .	31,170,000	12,180	2500
1873 . . .	46,480,000	20,116	2300

The amount redeemed was £11,760,000, leaving an actual issue of £34,720,000. The Credit Agricole was established on a similar basis in 1860, with a capital of £400,000, which was soon afterwards doubled; the issue of debentures in 1873 was a little over £50,000,000 sterling.

Savings banks were introduced into France in 1818, or fifteen years later than in England. The increase has not been so remarkable as in England, Germany, or Austria, because the French working-classes, to the number of 4,000,000 persons, invest for the most part in Rentes or Government stock. The progress of these banks has, nevertheless, been satisfactory, viz.—

	1841.	1860.	1878.
Depositors . .	500,000	1,510,000	3,050,000
Amount .	£10,070,000	£22,120,000	£40,410,000

The deposits compared with population were as 12s. per inhabitant in 1860, and are now over 22s.; the number of depositors has in like manner risen from 4 per cent of the population to 8 per cent, against 7½ per cent in the United Kingdom.

WEALTH OF FRANCE.

At the fall of Charles X., in 1830, the taxation and debt were comparatively small; since then the former has trebled, the latter quadrupled, but such has been the increase of industry that the nation is four times richer.

In 1830 the burthen of national taxation was 13 per cent on the national industry, and now it is only 9½ per cent.

	1830.	1878.
Trade	£47,000,000	£368,000,000
Agriculture . . .	186,000,000	380,000,000
Manufactures and Minerals	78,000,000	416,000,000
Annual industry .	£311,000,000	£1,164,000,000
Expenditure . .	£41,000,000, or 13 p.c.	£110,000,000, or 9½ p.c.

The above does not include local taxation, the relative burthen of all debt and taxes as compared with Great Britain being as follows:—

	France. Amount.	Per inh.	Great Britain. Amount.	Per inh.
National Debt[1] . .	£937,000,000	£25	£777,000,000	£23
Local ,, . .	134,000,000	3 : 10s.	125,000,000	4
	£1,071,000,000	£28 : 10s.	£902,000,000	£27
National taxes . .	£110,000,000	60s.	£83,000,000	50s.
Local ,, . .	42,000,000	22s.	50,000,000	30s.
	£152,000,000	82s.	£133,000,000	80s.

The ratio of all debt on capital, and of all taxes as compared with income, may be seen as follows:—

	France.	Great Britain.
Debt to capital . . .	14½ to 100	10½ to 100
Taxes to income . . .	16 ,,	12⅓ ,,

The French debt owes much of its increase to the recent war with Germany, which cost France £349,500,000, including £200,000,000 paid to Germany. The local debt includes a sum of £85,000,000 spent by Baron Haussman in rebuilding Paris, during seventeen years, from 1853 to 1869.

[1] The funded debt is only £800,000,000.

The average income of the French people is £25 per head, which is 50 per cent higher than the average of Europe (see page 42), the prosperity of the nation being the result of thrift and individual economy. We find the holders of rentes or Government stock and the depositors in savings banks have increased as follows :—

	No. of persons.	Average of savings and rentes.
1850 . .	1,766,000	£133 each
1860 . .	2,583,000	148 „
1870 . .	3,384,000	112 „
1877 . .	7,454,000	109 „

Thus one-fifth of the entire population is enrolled in the books of rentes-holders or savings-banks depositors, the rapid increase of numbers showing how the wealth of the country is disseminated.

France enjoys a high degree of credit among nations. Of this there was a striking proof in 1872, when M. Thiers called for a second loan, to pay off the German war-indemnity. The sum required was £140,000,000 sterling, and the subscriptions handed in were 12½ times that figure :—

		Per head.
935,000 French offered . .	£710,000,000	£760
108,000 foreigners offered . .	1,042,000,000	9650

The proportion offered by the various countries was—Germany 33, Belgium 28, Great Britain 23, Holland 6, Denmark 3, Italy 3, and other countries the remaining 4 per cent.

The gross capital of France is £7,334,000,000 or £202 per inhabitant, the income £930,000,000 or £25 per inhabitant. The capital is made up thus :—

Value of land . . .	£2,624,000,000
Property insured . .	3,140,000,000
„ not insured .	1,570,000,000
	£7,334,000,000

The two latter items are from the insurance returns, the insured property showing an annual premium of almost 1 per cent. The land stands for 35 per cent of the total, whereas in Great Britain it is only 21 per cent.

Colony of Algeria.

The French have such a dislike for emigration that, although Algeria is but 36 hours from Marseilles, the total French population is less than a quarter of a million, or about the same number of settlers as in our little colony of Queensland, which is not yet twenty years old. Since 1871 great efforts have been made to encourage emigrants, the Government having distributed 740,000 acres among 6900 families. Free land grants are given only to Frenchmen, which checks the influx of settlers from Italy and the Balearic Islands. Nevertheless, the farming population has increased 42 per cent since 1871, and counts at present 143,000 persons, who cultivate 470,000 acres. The Arabs and Kabyles have also 7,250,000 acres under tillage, and their flocks and herds number 14 million head. The wheat crop, unless when locusts appear, is double the quantity required for consumption, leaving 10 million bushels for exportation. About one-half of the Crown lands are suitable for settlers, the returns showing as follows:—

Province of Algiers . . .	230,000 acres
„ Oran	32,000 „
„ Constantine . .	444,000 „
Arab country	674,000 „
	1,380,000 „

Irrigation works of some magnitude exist in the Tell Valley. An excellent network of macadamised roads connects the city of Algiers with Oran and Tlemcen on the

Moorish frontier, and Guelma and Biskra on the limits of Tunis and Zahara. These roads traverse the Atlas and other ranges by means of terraces cut in the rock, and have numerous noble bridges to span the mountain torrents. The first railway was constructed in 1863 from Algiers to Blidah, and as soon as the Guelma line is complete there will be an almost continuous system from Tunis on the east to Oran on the borders of Morocco.

Exports have trebled since 1860, at present averaging £3 per inhabitant, the balance of trade being still largely against the country, say £3,000,000 per annum.

There is, however, some prospect of vine-growing on a large scale, which would soon swell the exports. About 50,000 acres are now under vines, the crop last year producing 9,000,000 gallons.

Some of the malarious districts, such as Lake Fetzara, have been rendered tolerably healthy by the planting of 12,500,000 Australian gum-trees.

GERMANY.

At the close of the last century the German Empire consisted of 300 independent States, and was described as a "chaos upheld by Providence." The treaty of Vienna reduced the number of States to thirty-nine, with twenty-seven sets of custom-houses.

So inconvenient was such a system that the publisher of Gœthe had to obtain twenty-two copyrights to secure his edition; and the first railways that were constructed had to pass through a dozen legislatures. The Franco-German war welded the Fatherland into a compact nation, the component parts being as follows:—

	Area.	Pop. in 1876.
Prussia . . .	134,100 sq. miles	25,742,000
Bavaria . . .	29,200 ,,	5,022,000
Saxony . . .	5,765 ,,	2,761,000
Wurtemburg . .	7,503 ,,	1,882,000
Twenty-two small States	33,262 ,,	7,320,000
	209,830	42,727,000

Although Germany has lost 2,247,000 persons by emigration since 1840, her population increases faster than that of any other country except England or the United States. The birth-rate and death-rate for the last five years averaged thus:—

Births	42½	per 1000 inhabitants
Deaths	29½	,, ,,
Increase . . .	13	,, ,,

Since the Franco-German war the birth-rate has risen

so sensibly, that it is now 5 per cent higher than it was twenty years ago.

	1860-61.	1875-76.
Prussia . . .	41 per 1000 inhabit.	43 per 1000 inhabit.
Bavaria . . .	35 ,, ,,	44 ,, ,,
Saxony . . .	43 ,, ,,	46 ,, ,,

Nevertheless, the proportion of births to marriages has declined, from 490 in 1860-61, to 481 in 1875-76 for every 100 marriages.

The effects of the Franco-German war are visible in the increased mortality of 1871-73, which showed as follows :—

	Over the average.
In Prussia	184,000 deaths
,, Saxony	28,000 ,,
,, Bavaria	13,000 ,,
	225,000

There was also a deficit of 124,000 in the births, as compared with 1870, being as 8 per cent of the total. The ratio of illegitimate births ranges from 8 per cent in Prussia to 13 in Bavaria, but the rate was 25 per cent in the latter country previous to 1868, in which year the laws against marriage were repealed. The marriage rate is higher than in England, having risen very notably since 1860, viz.—

	1860-61.	1875-76.
Prussia . . .	16½ per 1000 inhabit.	18 per 1000 inhabit.
Bavaria . . .	14 ,, ,,	16 ,, ,,
Saxony . . .	18 ,, ,,	20 ,, ,,

All the vital statistics offer more favourable aspects than in France, except as regards the average span of life, which is three years shorter. It is also remarkable that the number of deaf and dumb, and of insane, is much less than in France (see page 100).

Germany has been tolerably free from epidemics in the present century, although 420,000 persons fell victims to cholera between 1831 and 1875.

The actual population of the Empire is supposed to reach 44,000,000, of whom 40,000,000 are Germans, the rest being made up of Poles, Wends, and Jews.

GERMAN AGRICULTURE.

Before the great reforms introduced by Stein and Hardenberg, in 1809, the agricultural condition of Germany was deplorable. The serfs held their lands on the same feudal terms as in Hungary, subject to so many days of labour for their masters. Frederick the Great had desired to emancipate them, and more than once said, "I am tired of ruling a nation of slaves." But the wars of that period prevented his attempting so grave a task. It was not till after the peace of Tilsit that a stroke of the pen effected as wholesale a change in Prussia as had been carried out in France through a sea of bloodshed. The other German States followed the example, although the system of servitude[1] was not abolished till 1848.

At present the tenure of land in the various parts of the empire is as follows:—

	Productive area.	Farmers.	Average farms.
Prussia . .	48,800,000 acres	1,033,000	48 acres
Bavaria . .	11,280,000 „	456,000	25 „
Saxony . .	2,620,000 „	54,000	50 „
Wurtemberg .	2,540,000 „	152,000	17 „
Baden . .	1,830,000 „	111,000	15 „
Hesse Darmstadt	1,350,000 „	140,000	10 „
Saxe-Coburg .	510,000 „	15,000	33 „
Other States .	19,010,000 „	475,000	40 „
	87,940,000 „	2,436,000	37 „

[1] The emancipation in all parts of Germany was effected more or less in this way:—First, the serf's duties were assessed at £10 a year. Second, the master was awarded eighteen years' indemnity, say £180 payable in consols. Third, the serf bound himself to pay the State £10 a year for forty-seven years, that is 4 per cent on the price of his redemption, and £3 taxes, formerly paid by his master.

Germany raises 750 million bushels grain, and nearly 1000 million bushels of potatoes, yet this is not enough for her population of 44 millions. She has to import yearly about 60 million bushels of grain, the average consumption being 19 bushels of grain and 23 bushels of potatoes per head. The relative importance of Prussia in the agriculture of Germany is shown as follows :—

	Prussia.	Other States.	All Germany.
Grain	465 million bushels	285 million bushels	750 million bushels
Potatoes	650 „ „	325 „ „	975 „ „
	1115 „ „	610 „ „	1725 „ „

Agriculture is most advanced in those States where the average size of the farms is not below forty acres. There is, unhappily, a large number of cottier-farms, as in France, so small and confused that "it sometimes happens a man ploughs his neighbour's patch by mistake for his own." Germany raises one-third of the potato-crop of the world, say 24,000,000 tons, or six times as much as the United Kingdom. There is a surplus of 330,000 tons for exportation, most of which goes to England. The area under beet-root is increasing very rapidly; the average crop is 16 tons per acre, which produces $1\frac{1}{2}$ ton of sugar. The hay-crop averages 25 million tons, of which Prussia produces exactly one-half, the yield being $3\frac{3}{4}$ tons per acre.

The following Table shows the agricultural capital and annual product, as also the land mortgages in each of the chief divisions of the empire :—

State.	Agricultural capital.	Product.	Mortgages.
Prussia	£1,240,000,000	£230,000,000	£190,000,000
Bavaria	290,000,000	50,000,000	25,000,000
Wurtemberg	105,000,000	20,000,000	10,000,000
Saxony	90,000,000	15,000,000	26,000,000
Small States	335,000,000	25,000,000	22,000,000
	£2,060,000,000	£340,000,000	£273,000,000

The mortgages are about 18, or at most 21, per cent of the value of the land, against 58 per cent in Great Britain, but they were much higher until the Emancipation Law, which brought so many of the encumbered estates to the hammer, that it is stated not fifty families in Prussia hold the estates owned by them a hundred years ago. In 1837 it was found many nobles had mortgaged their lands up to 114 per cent, that is one-seventh more than the market value of the property. In 1858 there were several hundred estates that owed more than 75 per cent. No fewer than 34,000 landed estates were sold off in ten years ending 1867, and still the nobles owed the Mortgage banks £25,000,000 sterling in Prussia alone.

The crops in Germany for 1878 were as follow :—

	Acres.	Bushels.	Per acre.
Wheat . .	5,500,000	128,000 000	23 bushels
Rye . .	15,000,000	295,000,000	20 „
Oats . .	9,500,000	217,000,000	23 „
Barley . .	4,000,000	97,000,000	24 „
Garden-crops .	2,000,000	...	...
Potatoes . .	7,000,000	975,000,000	140 „
Pasture (hay) .	15,000,000	25,500,000 tons	34 cwt.
	58,000,000	Grain average	22 bushels

The garden-crops are made up in this manner :—

	Area.	Product.	Per acre.
Vineyards .	304,000 acres	90,000,000 gallons	300 gallons
Flax . .	500,000 „	300,000 cwt.	⅜ cwt.
Beet-root .	200,000 „	3,200,000 tons	16 tons
Tobacco .	51,000 „	45,000 „	18 cwt.
Hops . .	62,000 „	19,000 „	6 „
Beans, etc. .	300,000 „	6,000,000 bushels	20 bushels
	1,417,000 „		

The production of wine varies ; for example, Baden gives double the average per acre.

	Acres.	Wine.	Per acre.
Baden .	50,000	27,000,000 gallons	540 gallons
Alsace .	80,000	27,000,000 „	340 „
Bavaria .	55,000	13,000,000 „	240 „
Wurtemburg	44,000	9,000,000 „	220 „
Prussia .	50,000	8,000,000 „	160 „
Hesse .	23,000	7,000,000 „	300 „
	302,000	91,000,000 „	300 „

Wander-Lehrer, or pedestrian teachers of husbandry, are paid in each district to go round yearly, and give the peasants practical hints about their crops and lands.

There are still many large estates; for example:—

	Nobles' estates.	Average area.
Prussia .	22,470	910 acres
Bavaria .	1,120	370 „
Wurtemberg .	718	840 „
Saxony .	440	1130 „
Baden, Hesse, etc.	1,100	420 „
	25,848	920 „

These large properties, however, consist chiefly of forest or waste lands. The whole kingdom of Prussia has only 2670 estates producing a rent-roll of more than £400 per annum, of which number only 108 reach £1500 a year or upwards. The census returns show that nine-tenths of the arable lands of Germany are team farms, cultivated with the plough, and barely one-tenth spade tillage. The area under fallow is one-fifth in Prussia, and probably less in the other States. Steam-ploughs are unknown, as the farms are too small for them, but steam-threshers, as well as reaping and mowing machines, are in common use among the large proprietors, who hire them to the neighbours, or are maintained by clubs of peasant-farmers for the district.

Although Prussia stands for two-thirds of the agricultural and pastoral industry of Germany its soil is by no means comparable with that of some of the smaller

kingdoms. Wurtemberg is emphatically "the garden of Germany," presenting a charming picture of cultivation. Bavaria is the greatest hop-garden in the world, raising not only enough hops for her 5000 breweries, but an annual surplus of 1000 tons for exportation. The kingdom of Saxony, which is exactly the size of Yorkshire, is remarkable for the finest breed of sheep in Europe or elsewhere, the flocks being descended from a lot of 300 merinoes presented to the Elector in 1765 by the King of Spain.

The farm-stock of the empire is the largest in Europe after Russia, and shows precisely the same ratio to population as in Great Britain and France (see Appendix); it is distributed as follows:—

	Horses.	Cattle.	Sheep.	Pigs.	Goats.
Prussia	2,279,000	8,612,000	19,625,000	4,279,000	1,477,000
Bavaria	297,000	3,186,000	2,059,000	927,000	151,000
Wurtemberg	104,000	974,000	703,000	263,000	42,000
Saxony	95,000	611,000	485,000	124,000	75,000
Small States	585,000	2,417,000	2,328,000	1,707,000	585,000
	3,360,000	15,800,000	25,200,000	7,300,000	2,330,000

The increase of sheep and cattle in Prussia since 1840 has been 18 per cent, and probably the same in the other States. Most of the small farmers have numbers of poultry and bees. In Prussia there are 19 million fowls, said to lay 800 million eggs, worth £1,500,000 per annum,[1] and the bee-hives exceed 1,500,000 in number. The Pomeranian farmers pay their taxes with the proceeds of wild geese, smoked for exportation.

Forestry gives occupation to 160,000 persons, the area under forests being 33 million acres. The yield of timber varies from 24 cubic feet per acre in Prussia to 60 feet in Southern Germany, and the total annual product is esti-

[1] This return seems too low, since hens lay from 90 to 160 eggs per annum, according to the breed.

mated at £9,000,000 sterling, or 6s. per acre. These forests abound with game; the number of licenses issued annually averages 145,000, and the slaughter comprises 30,000 deer, 20,000 foxes, 3,000,000 partridges, and 2,000,000 hares.

The condition of the rural population is, on the whole, very prosperous, but the Germans can neither raise so much grain per acre, nor show the same result for the labour of the individual, as in the United Kingdom.

	United Kingdom.	Germany.
Bushels per peasant . . .	540	245
,, per acre . . .	36	22

But, although economically inferior to our system, that of Germany has the great merit of placing the bulk of the nation above the danger of want. It is, nevertheless, true that in some States the farmers only eat meat once a week, and subsist chiefly on porridge and rye-bread. Wages also are low, averaging £5 in-door per annum, or 15d. a day out-door, which explains the fact that 55,000 Germans migrate annually to the United States. The advance of agriculture is sufficiently shown by pointing out that in 1840 the grain crop averaged 6½ bushels per inhabitant, and at present the ratio is over 17 bushels.

GERMAN MANUFACTURES.

Manufactures in Germany owe much of their development to William Cockerill of Manchester (1780), who first introduced improved machinery from England, and established a cloth-mill and a paper-mill.

The first steam-engine was put up at Tarnowitz in Silesia, in 1788; but the use of steam-power did not become common until very recently (see page 63).

The various manufactures and handicrafts occupy almost 3,000,000 operatives, or one-ninth of the adult population.

	Factories.	Operatives.	Artisans.	Total.
Prussia .	79,529	680,000	630,000	1,310,000
Hanover .	6,949	46,000	75,000	121,000
Bavaria .	37,967	184,000	169,000	353,000
Wurtemberg	19,231	86,000	100,000	186,000
Saxony . .	11,357	214,000	82,000	296,000
Small States .	35,567	231,000	254,000	485,000
	190,600	1,441,000	1,310,000	2,751,000

The principal branches of manufacture stand in the following order :—

	Factories.	Operatives.	Product.
Woollens, cottons, etc. .	2,320	625,000	£63,000,000
Flour mills . . .	65,000	135,000	35,000,000
Breweries and distilleries	43,840	110,000	24,000,000
Metals and machinery .	2,255	728,000	42,000,000
Glass and pottery . .	1,060	105,000	10,000,000
Sugar and tobacco . .	3,936	125,000	15,000,000
Brick and lime . .	18,000	102,000	8,000,000
Paper, oil, timber, etc. .	54,189	581,000	73,000,000
	190,600	2,511,000	270,000,000
Miners	...	210,000	16,000,000
		2,721,000	£286,000,000

Cotton mills have multiplied eight-fold in forty years; they sum up 6,000,000 spindles, including 2,000,000 in the recently annexed territory of Alsace. The consumption of raw cotton and yarn has risen from 20 million lbs. in 1836 to 350 million lbs. in 1877.

Germany manufactures cottons to the annual value of £22,000,000, which is more than enough for home consumption, as shown by the excess of exports :—

	1872-75.		1876-77.	
Cotton goods imported	£820,000	per annum	£690,000	per annum
,, exported	2,740,000	,,	3,540,000	,,
	£1,920,000	,,	£2,850,000	,,

This shows a good increase in the last few years, notwithstanding the general depression of trade in Europe. Germany now ranks third in the cotton manufacture, possessing one-twelfth of all the spindles in the world.

Woollen factories sum up nearly 2,000,000 spindles, and consume 165 million lbs. of wool, of which one-half is imported; the annual clip in Germany gives barely 3 lbs. per sheep. The value of woollen exports is double that of imported manufactures.

	1872-75.	1876-77.
Woollen goods imported .	£3,950,000	£3,250,000
,, ,, . exported .	7,170,000	6,290,000
Excess of exports .	£3,220,000	£3,040,000

This industry is one of the most important in the empire, and employs 120,000 operatives. The total value of the goods produced is £26,000,000, or about half of the amount in France.

Linen factories employ 280,000 spindles and 450,000 looms, consuming annually 35,000 tons of flax, of which 15,000 tons are grown in Germany, the rest imported. Prussia stands for two-thirds of this industry, which has trebled in twenty years.

	1858.	1878.
Number of spindles .	74,000	280,000
Consumption of flax .	8,300	35,000

As a natural consequence, the cultivation of flax has risen prodigiously. The crop, twenty years ago, averaged 2200 tons, or one-seventh of what it is at present. In 1830 the total value of linen manufactures was only £1,550,000—say one-fourth of the actual amount.

Silk is largely manufactured, especially at Crefeld, where there are 32,000 looms, besides other centres of less note. The importation of cocoons averaged 2950

tons from 1872 to 1874; but since the latter year, it has been 3490 tons per annum. The value of silk manufactures is nearly £11,000,000 a year.

Flour mills number 65,000, one-half belonging to Prussia, and are classified as follows:—

Moved by steam	2,440
,, by cattle	3,500
,, by wind or water . . .	59,100
	65,040

As already observed, the production of cereals is not sufficient for home requirements. The imports and exports of the last six years show:—

	Tons.	Value.
Import . . .	14,500,000	£146,000,000
Export . . .	8,000,000	80,000,000
Surplus imports .	6,500,000	£66,000,000

Being an average deficit of 1,000,000 tons yearly, worth about £10,000,000 sterling.

Sugar mills consume 3,200,000 tons beet-root annually, producing about 300,000 tons beet sugar. This industry has grown with surprising rapidity in the last five years.

	1872.	1876-77.
Sugar imported . . .	44,000 tons per ann.	10,200 tons per ann.
,, exported . . .	13,200 ,, ,,	60,300 ,, ,,

Here we see that five years ago Germany had to import 31,000 tons of foreign sugar, while now she exports a surplus of 50,000 tons per annum. More than three-fourths of the sugar mills are in Prussia. The value of the annual production is over £6,000,000 sterling, this industry having grown nearly twenty-fold in thirty years.

1846	16,000 tons
1878	305,000 ,,

Compared with the area under beet-root, it is equivalent to one and a half ton per acre.

Tobacco factories are 3600 in number, and employ 70,000 operatives. Bremen is one of the principal seats. The importation is 50,000 tons tobacco yearly, of which 10,000 tons are afterwards exported as *quasi*-Havana cigars, being a mixture of Cuban, American, and Brazilian tobacco. This trade stands for about £9,000,000 per annum.

Breweries are another flourishing branch of business.

	Breweries.	Production.
Prussia	10,220	85,000,000 gallons
South Germany . . .	8,620	380,000,000 ,,
	18,840	465,000,000 ,,

Prussia brews only enough for her own people, who consume 3½ gallons per head. Bavaria has 5500 breweries, which produce 240,000,000 gallons. The consumption of hops in Germany is about 12,000 tons per annum.

Distilleries number 25,000, and consume annually 9,000,000 tons barley, 60,000,000 bushels potatoes, 50,000 tons of molasses, and 700,000 bushels of fruit. This industry has exactly doubled in forty years, which shows the same increase as population.

Clock-making occupies 40,000 persons in the Black Forest, and 100,000 in other parts of Germany. The former make 600,000 wooden clocks and musical boxes yearly. Many other manufactures employ a large number of persons. There are 10,000 saw-mills, 600 porcelain and pottery works, 300 glass factories, 7000 oil mills, and 950 paper mills.

Machinery is a manufacture of such very recent growth

that down to 1850 all the railway engines were imported, chiefly from England. At present there are 750 factories turning out locomotives and machinery, not only for Germany but foreign countries. One factory at Berlin has made 3600 railway engines, having done a recent order for Russia at £2250 per locomotive, or 10 per cent less than any manufacturer in the United States could do it for. This factory was established by Mr. Boesig in 1837, with £1500 lent him by a friend, and at his death his estate was valued at £3,000,000 sterling, his staff of workmen numbering 10,000.

Ironworks and foundries are 1200 in number, and employ 120,000 workmen, who produce merchandise worth £28,000,000 per annum. The quantity of iron and steel of all descriptions manufactured is over 2,400,000 tons yearly. Krupp's factory at Essen covers 1000 acres, and employs 10,000 men, 286 steam-engines (9230 horse-power), and 71 steam-hammers of 220 tons weight. Germany imports 500,000 tons pig-iron yearly, besides 2,000,000 tons produced from native ore. This iron is used for the manufacture of 400,000 tons steel rails, plates, and wire, and 2,000,000 tons of castings, rolled iron, etc. After supplying her own requirements, Germany has still a surplus of steel and iron merchandise for exportation, especially railroad bars, viz.—

	1872-75.	1876-77.
Exported . .	90,000 tons per annum	185,000 tons per annum

The exportation in 1877 was 225,000 tons, at a period when the iron trade in Great Britain and United States was under great depression.

MINERALS.

Coal.—The production is over 42,000,000 tons yearly, including 9,000,000 tons brown coal or lignite. The following Table shows how rapidly this industry has advanced :—

1805	300,000 tons
1822	1,270,000 „
1864	16,200,000 „
1873	42,300,000 „

More than two-thirds are raised in Prussia, the rest in Alsace and Saxony. There are 920 pits, which employ 160,000 miners, the output being valued at £10,000,000, including £1,500,000 for brown coal. The home consumption is 40,000,000 tons, leaving a surplus of 2,000,000 tons for exportation.

Iron.—The production has multiplied fifteen-fold in half a century. In 1830 the ores extracted gave but 120,000 tons pig-iron. At present there are 1071 mines, yielding over 4,500,000 tons ore, from which are obtained 2,000,000 tons iron. The miners number 20,000 hands, nine-tenths of the iron mines being in Prussia.

Copper.—In 1830 the production barely reached 2000 tons, or one-fourth of what it is at present. The mines are in Prussia and Saxony. The ore is not very rich, 260,000 tons giving about 8000 tons pure copper, say 3 per cent. The 69 mines employ 8000 men, and the annual output is valued at £300,000.

Zinc is produced by Prussia on a larger scale than in any other part of the world, the production having multiplied fifteen-fold since 1830. There are 77 mines, worked by 11,000 miners, who raise 350,000 tons ore per annum, worth £1 per ton. The ore gives 17 per cent zinc, that is, 58,000 tons.

Lead and Silver are produced by Prussia and Saxony, the former country standing for three-fourths. There are 168 mines, employing 11,000 miners, who raise 125,000 tons ore, or six times the quantity raised in 1830. Almost half the ore is lead, say 46 per cent.

Salt.—Actual production 1,000,000 tons, or seven times what it was in 1830.

Summary.

The mineral industries have grown as follows in thirty years :—

1846	. . . .	68,000 miners
1866	. . . .	148,000 „
1876	. . . .	205,000 „

The value of the minerals at the pit's mouth is about £15,500,000, or £75 for each miner. Prussia represents 80 per cent of the mineral product of Germany, employing 160,000 miners.

COMMERCE.

Under the old Hanseatic League the commercial relations of Germany became so extensive that one hundred foreign seaports (one of which was London) became affiliated to the great system of which Hamburg, Bremen, and Lubeck were the heads. Notwithstanding his frequent wars, Frederic the Great did not lose sight of commercial interests, for he was the founder of the Seehandlung Association. The multiplicity of German States and customs-tariffs, however, formed such an obstacle to progress that it was found necessary to create a Zollverein in 1848, and from this epoch may be dated the "renaissance" of German trade. Let us compare, for example, the shipping returns of entries at Hamburg and Bremen before the Zollverein with those of the present time :—

Entries.	1840-41.	1876.
Hamburg . . .	542,000 tons	2,227,000 tons
Bremen . . .	144,000 ,,	948,000 ,,
	686,000 ,,	3,175,000 ,,

At present Hamburg represents 40 per cent, and Bremen 18 per cent, of the trade of Germany. The mercantile navy has risen 14 per cent since 1870, being now ahead of the French; but the shipbuilders are unable to build vessels fast enough, seeing that the proportion of foreign entries has increased very notably since 1870.

	1870.	Ratio.	1876.	Ratio.	Increase.
German bottom .	765,000 tons	43 p. c.	2,063,000 tons	36 p. c.	170 p. c.
Foreign ,, .	991,000 ,,	57 ,,	3,519,000 ,,	64 ,,	253 ,,
	1,756,000 ,,		5,582,000 ,,		219 ,,

The German shipping now numbers 4750 vessels of 1,103,000 tons in the aggregate, manned by 42,300 seamen. Nearly 21 per cent of the tonnage consists of steamers. Entries of British vessels exceed by 12 per cent those of vessels bearing the German flag, the former reaching 2,298,000 tons. The trade returns are very confused, but the nearest estimate seems to be as follows :—

	Imports.	Exports.	Total.
Special trade . .	£190,000,000	£128,000,000	£318,000,000
Transit . . .	55,000,000	52,000,000	107,000,000
	£245,000,000	£180,000,000	£425,000,000

RAILWAYS AND CANALS.

Germany has doubled her mileage of railways in ten years, viz.—

	1867.	1876.
Miles open	9,045	18,080
Cost of construction	£154,000,000	£374,000,000
Gross receipts	20,631,000	42,862,000
Expenses	10,224,000	26,559,000
Profits	10,407,000	16,303,000
Earnings per mile	2,290 per ann.	2,380 per ann.
Expenses ,,	1,130 ,,	1,470 ,,
Profits ,,	1,160 ,,	910 ,,
Dividend on capital	6¾ per cent	4⅓ per cent

There has been no decline of traffic, but the expenses per mile have risen 30 per cent. The cost of construction down to 1867 was only £17,000 per mile, but the lines made since that date averaged £24,000, so that the existing average for all lines open is £20,500 sterling. Germany is now second only to the United States in the length of its railways. The various States of the empire appear as follows:—

	Miles of railroad.	No. of passengers.	Goods.
Prussia	10,672	118,000,000 per annum	90,000,000 tons
Bavaria	2,434	19,000,000 ,,	10,000,000 ,,
Saxony	1,252	20,000,000 ,,	11,000,000 ,,
Wurtemburg	810	9,000,000 ,,	3,000,000 ,,
Baden	733	12,000,000 ,,	3,000,000 ,,
Small States	2,179	24,000,000 ,,	15,000,000 ,,
	18,080	202,000,000 ,,	132,000,000 ,,

Thus the yearly traffic shows 11,000 passengers and 7500 tons merchandise carried for every mile of railway, the highest degree being attained by Saxony in the goods traffic, and by Baden in the number of passengers. The lines appear to be well managed, the loss of life averaging 20 persons yearly, say one in 10,100,000 passengers. The Dresden and Leipzig line is the oldest, having been built in 1839.

Canals and navigable rivers afford great facilities for cheap inland traffic. The principal canals are:—1. The

Altmuhl, connecting the Rhine and Danube, 107 miles in length, and 54 feet wide. By this means vessels drawing less than five feet can ascend from the Black Sea to the German Ocean. 2. The Elbe and Oder canal, besides numerous smaller ones. The inland navigation of Germany, between canals and rivers, shows :—

Prussia . . .	8,140 miles
Bavaria . . .	1,160 ,,
Other States . .	7,690 ,,
Total . .	16,990 ,,

The traffic on these water-ways occupies 20,900 canal-boats and 463 river-steamers, whose gross tonnage amounts to 1,550,000 tons.

The turnpike roads of the empire are as follows :—

Prussia . . .	25,300 miles
Bavaria . . .	6,200 ,,
Other States . .	33,700 ,,
	65,200 ,,

INSTRUCTION.

Germany has always been noted for the diffusion of enlightenment among all classes of her people. This, quite as much as the needle-gun, has led to her wonderful progress in recent years. Fifty years ago she stood among European nations almost without a rival in popular instruction, but at present there are various competitors for the foremost rank.

The muster-roll of German education shows as follows :—

	Schools.	Teachers.	Pupils.
Universities .	22	1,675	17,700
Gymnasia . .	505	3,500	108,000
Primary . .	60,000	75,000	6,100,000
	60,527	80,175	6,225,700

The oldest of the Universities is Heidelberg, which dates from 1386; the youngest is Strasburg, founded in 1872. The average of school-children to population is 15 per cent, but Germans usually claim 17 per cent, a ratio only surpassed by Canada or United States.

In 1875 there were but 2 per cent of the sailors, and 4 per cent of the soldiers, unable to read and write.

In 1840 there were 66 public libraries, with the following number of volumes:—

	Libraries.	Volumes.
Prussia . .	17	865,000
Bavaria . .	10	1,308,000
Saxony . .	6	460,000
Wurtemberg .	4	250,000
Hanover . .	3	342,000
Small States .	26	1,647,000
	66	4,872,000

In 1872 there were 153 public libraries, the aggregate number of volumes probably reaching 10,000,000. The first steam printing-press in Germany was put up so late as 1848. The number at present must be enormous, as Germany exports 5,000,000 volumes per annum. The number of new works published yearly is about 11,000, and supposing an average edition of 1000 copies, this would be equal to 11,000,000 volumes printed every year, or nearly 1,000,000 per month. The importation of foreign books is 2,500,000 volumes per annum.

The *Allgemeine Zeitung* of Augsburg is the oldest news-

paper in Germany, dating from 1794. The total number of newspapers in 1841 was 240, of which two-thirds were in Prussia. This did not include 132 magazines and scientific periodicals. In 1878 there were said to be 2350 newspapers and periodicals published in Germany.

Numerous, and of high standing, are the various associations of science and letters, of which there is unhappily no exact return. The principal are the following:—

Prussian Academy of Arts (1699).
Royal Scientific Association of Berlin.
Society of Natural History.
Geographical Society of Berlin.
Antiquarian Society of Stettin.
Historical Society of Breslau, etc.

There are also 820 agricultural associations, with 110,000 members and £40,000 income, for supporting libraries and reading-rooms in the rural districts.

BANKS.

The Imperial Bank, established in 1875, is merely a new form of the Bank of Prussia, founded in 1765. In 1856 the capital was doubled, the Government subscribing for £1,000,000, or one-fourth of the stock, when it was authorised to emit paper for three times its stock of bullion. In 1875 the Government drew out its capital, the bank engaging to pay a royalty of £100,000 per annum. The capital being raised to £6,000,000, the bank bought up the other banks of emission, except some minor ones with an aggregate of £5,500,000. The Bank of Munich emits notes for £1,000,000: its capital is £1,700,000, of which it must always keep two-thirds lent out to farmers at 4 per cent per annum on their estates, the mortgage never exceeding 50 per cent of the value. In 1864 it was

empowered to extend its operations by emitting mortgage debentures on such estates, the borrowers paying 5 per cent for fifty-two years, to include redemption, and the debenture-holders getting 4½ per cent interest. As the market value is only 90 per cent, the borrower pays in reality 5½ per cent. The amount in circulation in 1871 was over £5,000,000 sterling. Another Bavarian bank, that of Nuremberg, also gives loans on mortgage. The Military Widows' and the Church funds are likewise lent to peasant landowners in small sums, at 4 per cent per annum.

Saxony has six banks. The Bank of Dresden emits £800,000 in paper money. There are four Land banks, which emit mortgage debentures on the same plan as the Munich bank, except that the borrower pays only 5 per cent for forty-one years, until redemption. The Ritter's bank of Leipzig is a mutual accommodation bank among the great land-owners, charging 4 per cent per annum, and lending to none but its own members.

Wurtemberg has two banks: that of Stuttgart emits £600,000 in paper money. The Sparkassen Bank lends to the small land-owners at 5 or 6 per cent per annum, the latter rate covering redemption in twenty-five years.

The Prussian Mortgage and Rent-charge banks were established in 1810, to facilitate the emancipation of serfs and provide capital for the needy nobles, wherewith to purchase machinery for improved agriculture. The mortgage banks issued debentures, for which the borrower paid 4 per cent, and during the last thirty years the fresh issue yearly has ranged from £500,000 to £1,000,000 sterling per annum, the redemption to 28 per cent of the sums emitted. The following Table shows how the excessive emission has caused the stock to fall in value:—

	Amount of debentures.	Market price.	Average.
1815 .	£9,450,000	£64 to 103	£84
1835 .	14,100,000	101 ,, 107	104
1845 .	16,550,000	94 ,, 105	100
1868 .	28,760,000	78 ,, 84	81

More than £27,000,000 are due by the nobles, some of whose estates are heavily encumbered. The peasants owed nearly £1,000,000 in 1865. The latter have borrowed principally from the Rent-charge banks, namely, £13,250,000 in debentures at 4 per cent, which sell in the market for 87 per cent of their nominal value: they have already redeemed one-eighth of the above amount.

Hamburg claims the honour of having invented savings banks in 1778, but it seems there was one at Brunswick thirteen years earlier. The returns for 1878 show the savings banks of the empire as follows:—

	No. of banks.	Depositors.	Amount.	Dep. to pop.
Prussia .	979	2,059,000	£49,315,000	39s. p. inhab.
Saxony .	156	942,000	11,455,000	83s. ,, ,,
Bavaria .	260	279,000	2,490,000	10s. ,, ,,
Wurtemberg	121	301,000	2,766,000	30s. ,, ,,
Small States	171	452,000	10,554,000	28s. ,, ,,
	1687	4,033,000	£76,580,000	36s. ,, ,,

As the increase of these banks is an index of prosperity, the returns for all Germany may be compared thus:—

	Amount of deposits.	Deposits to population.
1848 .	£5,260,000	3s. 4d. per inhabitant
1861 .	14,510,000	8s. ,, ,,
1878 .	76,580,000	36s. ,, ,,

These banks usually lend out one-third of their funds on mortgage, mostly to small land-owners.

Germany has 195 joint-stock banks, whose capital in the aggregate reaches £85,000,000.

The banking power of Germany is £270,000,000, or

£7 per head of the population, being less than one-third of the ratio in Great Britain. It is, moreover, smaller in comparison with the capital of the nation than in Great Britain, viz.—

	Great Britain.	Germany.
Capital .	£8,580,000,000	£4,442,000,000
Banking power	760,000,000	270,000,000
Ratio .	9 per cent	6 per cent

WEALTH AND FINANCES.

The capital of Germany and the income stand thus:—

	Capital.	Income.	Ratio.
Agricultural .	£2,060,000,000	£340,000,000	17 p. c.
General . .	2,382,000,000	356,000,000	26 ,,
	£4,442,000,000	£696,000,000	16 ,,

This is equal to £16 per inhabitant, or 16 per cent on the capital of the empire. The income-tax returns for Prussia show a gross income of £130,000,000, which is equivalent to £210,000,000 for the whole of Germany, or nearly one-third of the actual earnings of the people. If we take the Government assessment as representing 30 per cent of the real income, the account will stand thus:—

Incomes of	Prussia.	Other States.	Total of Germany.	Gross income.
£500 or upwards .	218,200	135,000	353,200	£212,000,000
£50 to £500. .	2,108,000	1,316,000	3,424,000	274,000,000
Under £50 . .	4,666,000	2,915,000	7,581,000	210,000,000
	6,992,200	4,366,000	11,358,200	£696,000,000

As the number of tax-payers may be taken for so many families, it follows that each family has an average income of £60 per annum, or one-half the average of England.

It is satisfactory to note that the fortunes of the work-

ing-classes are growing more rapidly than population, and even more so than the fortunes of the rich.

Increase from 1852 to 1867.

	In population.	In wealth.
Working-classes . .	18 per cent	87 per cent
Educated ,, . .	68 ,,	82 ,,

Wages are much lower than in England (page 65), and so are the relative earnings of the working-classes, being 30 per cent of the national income in Germany, and 38 per cent in Great Britain. As an instance of the provident habits of the German people, we have not only the fact that the savings banks contain £76,500,000 sterling, mostly the deposits of the working-classes, but also the steady development of the co-operative societies begun by Mr. Schultz-Delitsch in 1864. These societies have now 4800 branches, with 1,400,000 members, whose deposits reach £18,500,000, and their annual transactions average £140,000,000. There is, moreover, the Journeymen's Union, with 127 branches and 268,000 members, whose annual subscriptions amount to £1,100,000, the society providing for the support of 96,400 widows, orphans, or infirm members.

The accumulation of wealth in Germany averages £32,000,000 per annum, which is less than half of the accumulation in France or Great Britain. The ratio of the working and the educated classes is shown as follows:—

Working-classes . .	£7,400,000 per annum
Educated ,, . .	25,300,000 ,,
	£32,700,000 ,,

National Debt is only as $4\frac{1}{2}$ per cent of the capital of the German people, and is therefore comparatively half the

burthen that it is in Great Britain. At the death[1] of Frederic the Great there was not only no national debt, but an enormous amount of treasure (£10,500,000) in the Government vaults at Berlin, which money was afterwards used in the wars against Napoleon.

The total public debt is at present £215,000,000, but the various State properties would suffice to redeem it.

The debt and taxation do not fall equally in every part of the Fatherland, as shown by the following Table :—

	Expenditure.	Debt.	Expenditure per inhab.	Debt per inhab.
Prussia .	£34,000,000	£65,000,000	27s.	50s.
Bavaria .	13,000,000	55,000,000	52s.	220s.
Wurtemburg	2,500,000	20,000,000	27s.	200s.
Saxony .	2,750,000	17,000,000	20s.	124s.
Small States	10,000,000	41,000,000	27s.	112s.
Imperial budget	22,750,000	17,000,000	10s. 6d.	8s.
	£85,000,000	£215,000,000	40s.	98s.

The war indemnity of £200,000,000 paid by France was distributed in the following manner :—

To Prussia	£79,000,000
,, the other States . .	66,000,000
,, invalid soldiers . . .	30,000,000
,, new fortresses . . .	17,000,000
,, purchase of railways . .	8,000,000
	£200,000,000

Taxes, including local, are equal to 15 per cent of the national income, a greater burthen than we have to support in Great Britain, which is partly due to the heavy military expenditure, partly to the Federal system, whereby

[1] Frederic was not only a great soldier, but a most careful economist ; he was said to know exactly what every acre of land, every pair of hands, every yoke of oxen, in his dominions was capable of producing.

each State has to support its own monarch, cabinet, and legislature, besides the imperial administration.

PRUSSIA.

The treaty of Tilsit in 1809 reduced this kingdom to an area of 59,000 square miles, with 4½ million inhabitants. In little more than half a century it has risen to a foremost rank in European councils, exercising the same preponderance in the German Empire that England does in the affairs of the British Empire. The area of Prussia has been extended partly by purchase of mediatised principalities, partly by the conquest of Sleswig, Hanover, and other territories. The growth of area and population is shown as follows :—

	Square miles.	Population.	Inh. per sq. mile.
1809 . . .	59,100	4,600,000	78
1836 . . .	110,000	14,460,000	129
1876 . . .	134,100	25,742,000	192

In 1858 the population of Prussia formed 50 per cent of that of Germany; in 1876 the proportion was 62 per cent. In agriculture and manufactures Prussia represents 60 to 65 per cent of the industry of the Empire. In public instruction the ratio is still higher. It may, therefore, be laid down that this kingdom constitutes materially and economically two-thirds of Germany.

The industry of the country suffers by reason of the kingdom forming, as it were, a great barrack. But the system is not wholly a curse, because it gives the peasant habits of discipline, and the term of service is just sufficient to make him a soldier without unfitting him for the arts of peace. Out of 100 adult males in the kingdom it will be found as follows :—

[1] The treaty of Vienna in 1815 restored to Prussia most of the territory taken from her by Napoleon.

5	per cent	are in the army.
22	„	form the Landwehr or reserve.
23	„	are below the height of 5 feet 4 inches.
34	„	are rejected for ill-health or defect.
16	„	are exempted by law.
100		

Thus the total military strength is 1,670,000 men, out of 6,100,000 adult males, say 27 per cent. Although the rural classes constitute but 45 per cent of the population, they supply 65 per cent of the army.

There are 87 per cent of the population who speak German, and 13 per cent Polish.

Manufactures have made great progress during the present century :—

	1805.	1875.
Operatives	350,000	1,310,000
Value of manufactures .	£13,000,000	£170,000,000

In 1876 the principal industries showed as follows :—

	Factories.	Operatives.	Product.
Cottons, woollens, etc. .	1,400	375,000	£38,000,000
Metals and minerals .	3,100	360,000	42,000,000
Flour-mills . . .	32,000	70,000	15,000,000
Breweries and distilleries	15,000	50,000	10,000,000
Sugar and tobacco . .	1,660	65,000	10,000,000
Various . . .	11,340	490,000	55,000,000
	64,400	1,310,000	£170,000,000

The produce of the mines is valued at £13,000,000, and that of the smelting-works and foundries at £29,000,000 per annum, say 80 per cent of the mineral and metal industries of the Empire (see page 278).

The railways cost for construction as follows :—

	Miles.	Cost.	Per mile.
Government lines .	2,822	£60,000,000	£21,300
Private do. .	7,850	166,000,000	21,150
	10,672	£226,000,000	£21,200

All these lines carry 120 million passengers and 90 million tons merchandise per annum. They kill only one passenger in 11 millions. The average returns for 1876-77 show :—

Receipts	£27,605,000
Expenses	16,470,000
Net profits . . .	£11,135,000

This is almost 5 per cent on the cost of construction.

Public expenditure averaged for the last three years £34,000,000 sterling, or 27s. per head. About 44 per cent of the revenue proceeds from Government railways, forests, mines, and crown-lands, although some of these items are very precarious ; for example :—

	1872-74.	1876-78.
Government mines .	£2,200,000 per annum	£770,000 per annum

It appears that 21 per cent of the population are on the register as voters, but two-thirds of them never exercise the right of franchise, the number of actual voters being only 6 per cent.

PRUSSIAN AGRICULTURE.

The area of Prussia is 85,820,000 acres, of which two-thirds are under cultivation, the rest being forest and mountain :—

Under grain crops . . .	23,000,000 acres
„ potatoes	5,000,000 „
„ flax, beet, etc. . . .	1,000,000 „
Meadow and fallow . . .	28,000,000 „
Forest and mountain . . .	23,000,000 „
Cities, mines, rivers, etc. . .	6,000,000 „
	86,000,000 „

Stein's law of 1809 liberated the serfs from the annual burden of 5½ million days of hand labour, and 21½ million

of team labour, together 27 million days' labour. The value of this service to the nobles was estimated at £2,200,000, which was capitalised at thirteen years, the peasants being thereby compelled to pay their masters a sum of £28,600,000 sterling. The rent-charge banks, created in 1810 for the purpose, advanced to the peasants sums at 4 per cent interest, in all £13,250,000; and in this manner about half a million peasants became free land-owners. The progress of peasant proprietorship was accelerated by the new laws in 1848, since which time we find as follows:—

	Peasant estates.	Area, acres.	Average.
1848 . .	986,000	26,600,000	27 acres
1868 . .	1,683,000	43,500,000	25 „

The balance due by the peasants to the rent-charge banks in 1870 was £11,500,000, since they had paid off by annual sinking fund £1,750,000, or one-eighth of the moneys advanced to them. They also owed the mortgage banks £1,000,000 sterling.

Taking the whole of the kingdom, we find it is owned as follows:—

	Acres.
Crown-lands	11,200,000
Cities, mines, etc. . . .	5,600,000
Private properties . . .	69,020,000
	85,820,000

The division of the properties is in this manner:—

	Estates.	Area, acres.	Average.
Nobles .	22,470	21,200,000	900 acres
Farmers .	1,503,000	44,800,000	30 „
Cottiers .	1,087,000	3,100,000	3 „
	2,612,470	69,100,000	27 „

The best feature is the progress of the middle class farmers, who form the strength of Prussia, their number having increased as follows:—

	Farmers.	Acres.	Average.
1816 . . .	382,000	23,000,000	65 acres
1870 . . .	1,503,000	45,000,000	30 „

The rural population is made up as follows :—

Farm-proprietors . . .	1,503,000
Tenant-farmers . . .	70,000
Cottiers	1,087,000
Farm-labourers . . .	1,309,000
Foresters	99,000
Women and children . .	7,542,000
	11,610,000

The farm-proprietors include 165,000 women holding lands in their own right. There are also 890,000 women actively engaged in farm-work, earning about £4 per annum as in-door servants. Taking the adult male population (rural) at 4 millions, they cultivate 7½ acres tillage per head, besides 7 acres under grass or fallow.

Tenant-farmers are few in number, say 5 per cent as compared with the above class. They often take large tracts of land, especially crown-lands, and invest much capital in improvements. In 1870 the lease of one of these estates fell in, and the tenant, who was paying £2000 per annum, made the highest bid for the new lease, at £10,000 per annum. Some farms are let on twelve years' lease, others for the lives of the tenant and his wife.

Cottiers are unable to subsist on their patches of ground, and work as labourers on adjacent farms. The expenses of a cottier's family of 5 persons average £16 to £20 per annum ; food, £10 ; clothing, £3 ; sundries, £3 ; including 12s. 6d. taxes. The food consists of porridge, potatoes, herrings, and rye-bread ; even the better class of farmers eat meat only on Sundays. In some parts, however, the farmers and their servants have meat twice a week.

The progress of agriculture in the last forty years is shown by the crops and farming-stock :—

	1841.	1879.	Increase.
Grain crops . .	102,000,000 bushels	465,000,000 bushels	363 p. c.
Value of all crops	£24,000,000	£171,000,000	612 „
Horned cattle .	7,430,000 head	8,612,000 head	16 „
Sheep	16,220,000 „	19,625,000 „	21 „

Forty years ago the grain crops averaged 6½ bushels per head of the population; at present the average is 18 bushels grain and 26 bushels potatoes per head. This enormous increase of tillage has necessarily thrown pastoral industry into the background; thus, in 1841, every 100 inhabitants of Prussia had 49 head of cattle and 105 sheep, but at present they have only 33 cattle and 78 sheep.

Wheat gives a yield of eight-fold, the farmers sowing three bushels per acre, and the medium crop being almost twenty-four bushels, the same as in Ireland. The following is the latest return of acreage and crops of cereals:—

	Acres.	Crops.	Per acre.
Rye . . .	11,300,000	220,000,000 bushels	20 bushels
Oats . . .	7,100,000	148,000,000 „	21 „
Wheat . . .	3,100,000	69,000,000 „	23 „
Barley, etc. . .	1,350,000	28,000,000 „	21 „
	22,850,000	465,000,000 „	21 „

In those districts where there are tenant-farmers the ordinary rent is £1 per acre, but the fat pastures of Lower Rhine command as high as £5 per acre. The estimate of the product of an acre of land under crops is as follows:—

Value of crop . . .	75s. per acre
Cost of production . .	60s. „
Taxes	8d. „
Net profit	14s. 4d. „

The hay crop averages nearly 2 tons per acre, and produces in the aggregate £31,000,000 sterling per annum. The increase of steam-power, compared with that of cattle, in farming operations, is shown as follows:—

	Steam-engines.	Horse-power.	Draft horses.	Do. oxen.
1846 . .	48	504	1,235,000	742,000
1861 . .	242	4170	1,487,000	696,000

The Germans say that whatever labour costs one penny by steam will cost twopence by horse or ox, and thirty-six pence by man. There are, however, no steam-ploughs, owing to the smallness of the farms; but each district has steam threshers, and sometimes reaping and mowing machines, which are hired out by the rich proprietors, or kept by a club of peasant farmers. Road-locomotives from the Berlin factory are also sometimes found. Although the soil is not equal to that of other parts of Germany, the condition of the rural classes is better. The people are laborious and thrifty, and mendicancy is unknown. Railways have been productive of incalculable benefit to the farming classes, not only by stimulating agriculture, but also by equalising the price of grain. The following Table shows the quotations of rye, the chief food of the people, before and since the introduction of railways:—

	Prussia Proper.	Rhenish Prussia.
1817 . . .	5s. 8d. per bushel.	12s. 6d. per bushel
1856 . . .	8s. 3d. ,,	10s. ,,

Sixty years ago the price in one part of the kingdom was more than double what it was in another.[1]

Prussia possesses about two-thirds of the farm-stock of Germany (see page 271), representing a value of £136,000,000, or more than £5 for each inhabitant. The horses are remarkably fine, and their number has increased 22 per cent since 1864. The refining of sheep reached a climax a few years ago, and the farmers now find it more profitable to raise sheep for food than for wool.

Forests cover an area of 20,000,000 acres, of which

[1] The same occurred in Spain; see page 427.

one-half is held by the Crown or communes, one-half by private owners. The annual product is 480,000,000 cubic feet timber, say 24 cubic feet per acre. The total proceeds in 1870 were £3,800,000 sterling. The tax is 1s. 5d. per acre, and the annual yield of timber is equal to 20 cubic feet for each inhabitant of the kingdom.

Raffeisen's farmers' aid societies, begun in 1816, have been of immense benefit to the agricultural classes by saving them from money-lenders. There are fifteen of these societies counting 4000 members. The total of rural mortgages in the kingdom is £190,000,000, equal to 21 per cent of the landed value.

BAVARIA.

The second great division of the German Empire has an area of 29,200 square miles, or about 19,000,000 acres. Agriculture is the principal industry, but the brewers pay two-thirds of the revenue. In size Bavaria is equal to Ireland; its population, however, is one-fifth less. The principal manufacture is beer, the number of breweries exceeding 5500, which consume annually 10,000,000 bushels of malt, and produce 240,000,000 gallons beer. The various industries are in this order:—

Breweries and distilleries . . .	40,000 operatives
Cotton, woollen, linen factories .	68,000 „
Glass, china, bricks	26,000 „
Metals and minerals	23,000 „
Corn-mills, saw-mills, tanneries	26,000 „
	183,000

In 1840 King Ludwig completed, at a cost of £800,000, the canal proposed by Charlemagne in the eighth century, connecting the Rhine and the Danube. Bavaria has made much progress in the last thirty years, and is fairly pros-

perous. The public debt stood at £21,000,000 in 1858, but has since risen to £55,000,000, the Government having expended £40,000,000 on the construction of 2400 miles of railway, say £16,500 per mile. The cost of Government is about £13,000,000, or 52s. per head of the population, say 10 per cent higher than in Great Britain.

BAVARIAN AGRICULTURE.

Feudal rights were not abolished till 1848, when the law of emancipation was promulgated, giving the serfs the option of redemption in any of the three following modes:—

1st. To pay down cash to the landlord eighteen times the assessed annual value of the service.

2d. To pay a rent for thirty-four years equal to two-thirds of the supposed net profit from the land.

3d. To borrow from the State Bank, at 4 per cent, the sum requisite for redemption.

Most of the peasants seem to have adopted the last mode, as the returns for 1870 show that they had borrowed in this way, on mortgage of their lands, an amount of £18,350,000, of which they had already paid back to the bank £3,000,000.

The distribution of landed property is at present as follows:—

	Owners.	Acres.	Average.
Nobles . . .	1,100	400,000	370 acres
Farmers . . .	226,000	11,700,000	50 „
Peasants . . .	290,000	1,500,000	5 „
Crown . . .	...	3,430,000	...
Cities, rivers, etc. .	...	1,362,000	...
	517,100	18,392,000	35 „

One-third of the kingdom is composed of dense forests, of which the Crown owns one-half, the official valuation showing as follows:—

	Area.	Valuation.	Per acre.
Forests . .	5,900,000 acres	£30,000,000	£5
Arable . .	7,300,000 ,,	95,000,000	13
Pasture . .	3,900,000 ,,	38,000,000	10
	17,100,000 ,,	£163,000,000	£9 : 10s.

The forests produce annually 380 million cubic feet of timber, or 65 cubic feet per acre, which is nearly three times the yield of Prussian forests. The value of the timber is about £3,000,000 per annum, say 10s. per acre.

The arable lands are in the following proportions :—

	Acres.	Crops.	Per acre.
Rye . .	1,430,000	24,000,000 bushels	17 bushels
Wheat . .	720,000	12,000,000 ,,	17 ,,
Spelt and barley	1,180,000	30,000,000 ,,	25 ,,
Oats . .	1,150,000	25,000,000 ,,	22 ,,
Potatoes .	660,000	66,000,000 ,,	100 ,,
Vines . .	56,000	14,000,000 gallons	250 ,,
Hops . .	45,000	6,500 tons	3 cwt.
Flax . .	115,000	26,000 ,,	4½ ,,
Tobacco .	14,000	8,200 ,,	11 ,,
Clover . .	720,000	880,000 ,,	25 ,,
Beet and turnips	220,000	900,000 ,,	4 tons
Fallow . .	990,000	...	...
	7,300,000		

The production of cereals amounts to 91 million bushels grain and 66 of potatoes, or 18 bushels of the former and 13 of the latter, per head of the population. This is hardly enough for home consumption, especially in view of the large quantity of grain required for the breweries and distilleries.

Farm-servants are well paid and fed; wages £10 per annum and board, or 1s. 6d. per day. The rations for indoor servants are 18 bushels grain, 6 bushels potatoes, 125 lbs. meat, 700 lbs. milk, and 2 gallons of beer per annum.

Nevertheless about 3500 young men and women emigrate yearly to the United States.

There is only one steam-plough in the kingdom, but more than half the grain is threshed by steam. Some districts form clubs to buy steam-threshers, others hire them from the wealthy proprietors.

This kingdom is proportionately richer in farm-stock than Prussia, the average being nearly £8 worth for each inhabitant (see page 271).

WURTEMBURG.

This little kingdom is just the size of Wales, having an area of 4800 square miles. There is a surplus of 7½ per cent females in the population. The principal manufactures are wooden clocks and musical boxes, of which 1,000,000 are made yearly by the peasants of the Black Forest. There are four mills for making beet-sugar, and half a dozen cotton and woollen factories. The Government salt-works produce over 30,000 tons. Fully three-fourths of the population are engaged in agriculture.

Education has always been at a high standard. Even fifty years ago the proportion of school children was the highest in Europe, and the returns at present are equally satisfactory.

	Attending School.	Ratio of Population.
1830	272,000	17 per cent
1877	350,000	18½ ,,

Every inhabitant over ten years of age can read and write.

AGRICULTURE.

The "Garden of Germany," as this country is styled, forms a pleasing picture to the economist, as horticulture

and agriculture are closely blended. The highways, bordered with fruit trees, traverse a diversified and fertile succession of farms and vineyards until reaching the Black Forest on one side, or the Swiss Lakes on the other.

According to official returns we find as follows :—

Under crops . .	2,200,000 acres
Pasture . . .	940,000 ,,
Forest	1,420,000 ,,
Cities, rivers, etc. .	240,000 ,,
Total area . .	4,800,000

In 1817 the law was passed to emancipate the serfs, but the nobles of Wurtemburg petitioned the Imperial Diet at Frankfort, and obtained a postponement of the measure for twenty years. The peasants on all the Crown-lands were freed in 1836, but the emancipation throughout the kingdom did not have full effect until 1848. It was finally agreed to pay the nobles a rent for twenty-five years, ending in 1873, and of this the peasants paid one-half, the Crown the other.

The land-owners at present are as follow :—

	Owners.	Acres.	Average.
Nobles .	718	650,000	840 acres
Farmers .	85,000	1,900,000	22 ,,
Gardeners	246,000	750,000	3 ,,
Public lands	...	1,100,000	...
	331,718	4,400,000	13 ,,

An average farm of 22 acres is said to produce £73 per annum, say 66s. per acre, and as the cost of seed and wages is £23, it leaves the farmer £50 for the support of his family ; the household generally contrive to make £15 out of wood and poultry, so that the farmer's income reaches about £65 sterling. There are 17,000 acres of Crown-

land held by tenants, who have about 170 acres each, half tillage, half pasture, on leases for eighteen years. These tenants, as often happens in Germany, are a superior class of men to the small proprietors, with more intelligence and capital. They are prohibited from sub-letting their lands to others. The ordinary class of farmers are well-to-do, but the poor cottiers live on rye and potatoes, with meat only twice a year. There are 48,000 indoor farm-servants who earn £6 a year, and are well fed, being allowed, moreover, a gallon of cider daily.

The area under crops increased after the emancipation, the extent of fallow-land in 1864 being 142,000 acres less than in 1848. The abolition of serfdom was not, however, unattended by a passing inconvenience. Such was the desire for land that the banks lent freely on all sides, lands rose to a fictitious value, and then came a general "smash" in 1853. At present, although one-sixth of the kingdom is mortgaged, agricultural industry is prosperous. Vineyards often realise as much as £100 per acre. The official valuation shows thus:—

	Acres.	Value.	Per acre.
Vineyards, etc.	204,000	£8,200,000	£40
Under crops	2,050,000	36,000,000	18
Meadow	720,000	20,000,000	28
Pasture	220,000	1,100,000	5
Forest	1,420,000	14,400,000	10
	4,614,000	£79,700,000	£17

Thus the value of land is almost double per acre what it is in the rest of Germany.

The crops average as follows:—

	Acres.	Crop.	Per acre.
Grain	1,320,000	30,000,000 bushels	23 bushels
Potatoes	160,000	16,000,000 ,,	100 ,,
Flax	80,000	20,000 tons	¼ ton
Vines	45,000	90,000,000 gallons	200 gallons

Some years there is a surplus of half-a-million bushels of grain for exportation, but as the ordinary production is only sixteen bushels per inhabitant, it is barely enough for home use. Potatoes were introduced in 1710 by the Waldenses, and are now a valuable item of food. The yield of the vineyards is little over 200 gallons per acre, or one-third of what is obtained in the adjacent duchy of Baden.

There has been an increase of 44 per cent in the number of horned cattle since the abolition of the feudal laws in 1848. The sheep are very fine, being mostly descended from the Spanish merinoes. Some of the farmers attend to bees, the number of beehives exceeding 100,000. A certain kind of snails is also bred as an article of food.

The forests yield over a million sterling per annum, those belonging to the Crown forming one-third, say half-a-million acres; and the Communes possessing nearly an equal extent. They were in the earlier part of the century so strictly preserved that it seemed the kingdom would be overrun by wild boars, deer, foxes, and hares. The king ordered a grand "battue" in 1817, which resulted in reducing the quantity of game very notably.

SAXONY.

The kingdom of booksellers forms the fourth great division of the empire. Its area is less than that of the Grand-duchy of Baden, but it has double the number of inhabitants. Its population is 55 per cent thicker than that of China, and is the densest in the world, except Belgium.

Since 1837 there has been an increase of 66 per cent, against 40 per cent for the rest of Germany. The returns for 1875-76, as compared with fifteen years ago, show as follows:—

	1875-76.	1860-61.
Births	46 per 1000 inhab.	43 per 1000 inhab.
Deaths	31 ,,	29 ,,
Increase	15 ,,	14 ,,
Marriages	20 ,,	18 ,,

Although the marriage-rate is the highest in Europe, the ratio of illegitimate births is also very high, being three times greater than in England, and 50 per cent over Prussia.

Mining occupies a considerable number of workmen, most of the mines being worked by Government; the products are coal, iron, lead, and copper.

The linen factories employ 60,000 operatives, and turn out more than £1,000,000 worth of table-cloths and other fabrics. The cotton manufactures are also reputed excellent.

There are said to be more printing-presses for the population than in any other part of the world, and the annual production of books by Tauchnitz and other great publishers reaches several million volumes. The book-fair of Leipzig is held simultaneously with that of porcelain, dry goods, etc., and the aggregate of merchandise annually sold is 20,000 tons in weight and £3,800,000 in value, books probably constituting one-third. The total import and export trade is over £10,000,000, of which one-fourth is in the hands of Hebrew dealers.

Education is at the same high level as in Wurtemburg, every person over ten years being able to read and write. The University of Leipzig is attended by 3000 students, and ranks as the second in Germany.

In 1870 the mortgages in the kingdom amounted to £26,000,000, or one-half the value of the territorial area.

AGRICULTURE.

The kingdom of Saxony is just twice the size of Devonshire, and is distributed in this manner:—

	Estates.	Area.	Average.
Nobles . .	440	490,000 acres	1100 acres
Farmers .	53,000	1,610,000 ,,	30 ,,
Cottiers .	45,000	85,000 ,,	2 ,,
Crown lands .	...	1,077,000 ,,	...
Cities, rivers, etc.	...	427,000 ,,	...
	98,440	3,689,000 ,,	37 ,,

The value of the land is as follows:—

	Acres.	Value.	Per acre.
Under crops .	1,550,000	£28,000,000	£18
Meadow .	480,000	13,000,000	26
Pasture . .	510,000	4,000,000	8
Forest .	720,000	6,000,000	8
	3,260,000	£51,000,000	£17

More than half the Crown lands are covered with forest. These lands and the estates of the nobles are leased to tenants for terms of twelve years. The forests produce 52,000,000 cubic feet of timber per annum, about 70 cubic feet per acre, or three times the yield of Prussian forests.

The total area under cereal crops is barely 1,500,000 acres, and the grain raised is insufficient for so dense a population, viz.—

	Acres.	Bushels.	Per acre.
Rye	620,000	13,000,000	21 bushels
Wheat	260,000	5,000,000	20 ,,
Oats	410,000	8,000,000	20 ,,
Potatoes	260,000	27,000,000	104 ,,
	1,550,000		

The product averages 10 bushels of grain and 10 of

potatoes for each inhabitant, or about half of the average in Prussia.

There are 1,100,000 acres under meadow, fallow, and pasture, some of the sheep-farms being among the most renowned in Europe. That of Herr Steiger, at Meissen, was founded by the Prince of Reuss in 1806, with merinoes brought from Spain, and now produces 500 rams and ewes annually for exportation to all parts of the world.[1] The present flocks of Saxony derive their origin from a lot of 300 merinoes sent as a present by the King of Spain in 1765 to the Elector of Saxony, the flock being accompanied by a gift of six Spanish shepherds and their dogs. At present Spain gets periodically from Saxony some of these fine sheep to improve the deteriorated flocks of her own.

The farmers holding about thirty acres are able to live comfortably, but the condition of the poor cottiers is far from as favourable as that of ordinary farm servants. Even in good years the consumption of meat in Saxony is only 50 lbs. per head per annum, but it frequently falls to 20 lbs., which is very insufficient, being only an ounce of meat per day on the population.

Small States.

Baden is the most remarkable of the Duchies or Principalities. It has an area 90 square miles greater than the kingdom of Saxony, and a population of 1,507,000 souls, or nearly equal to that of Wurtemburg. Its area is as follows:—

[1] Some New Zealand farmers have recently bought animals here at £400 per head.

Under crops . .	1,350,000 acres
,, pasture . .	660,000 ,,
,, vines and gardens	90,000 ,,
,, forest, etc. .	1,644,000 ,,
	,,
	3,744,000 ,,

The crops average 21 million bushels grain, 20 million bushels potatoes, 8000 tons flax, 12,000 tons tobacco, 27 million gallons wine. The serfs were emancipated in 1848 for eighteen years' purchase of the assessed value of feudal rights, the Government paying the nobles one-fifth, and the rest being made good by the peasants in return for their lands. The latter discharged their obligations so rapidly that the nobles found themselves at a loss how to employ so much money: most of them re-bought their own lands. At present the tenure is as follows:—

	Number.	Acres.	Average.
Farmers and nobles .	36,000	2,850,000	78 acres
Gardeners and peasants	78,000	490,000	6 ,,
Crown lands, etc.	...	404,000	...
	114,000	3,744,000	33 ,,

There are 111,000 farms, ploughed by 260,000 oxen, and 3000 cultivated with the spade. Wages average 2s. per day out-door. For some years the Duchy lost about 2000 emigrants per annum, who took with them from £30 to £50 each. The manufacture of wooden clocks, metal spoons, and linen, occupies 168,000 persons. The Black Forest yields excellent timber, some of the pines attaining a height of 180 feet. The farm-stock comprises 73,000 horses, 481,000 cows, 189,000 sheep, 480,000 pigs, and 22,000 goats, of a total value of £7,120,000, or nearly £5 per head of the population.

Hesse-Darmstadt has an area of 1,830,000 acres, distributed thus:—

	Number.	Acres.	Average.
Farmers . .	1,000	310,000	300 acres
Cottiers . .	144,000	1,200,000	8 ,,
Corporate . .	...	320,000	...
	145,000	1,830,000	13 ,,

The rural population is 558,000, or 60 per cent of the total number of inhabitants. This little Duchy sent out 150,000 emigrants in forty years. The peasants are well fed, the rations of in-door servants being 5 oz. meat, 4½ lbs. bread and potatoes, 1 lb. sauer-kraut, ½ lb. cheese and cream, and ½ pint of corn-brandy daily.

Saxe-Coburg is a Duchy of 525,000 acres and 182,000 inhabitants. There are 10,000 farms, averaging 35 acres each, under wheat, rye, beet-root, and lucerne; the owners are able to live comfortably, but not on the same footing as the tenant-farmers. The latter rent most of the large estates in farms of 400 acres each.

The other small duchies partake of the character of Coburg and Darmstadt: their statistics will be found included in those of Germany.

BELGIUM.

THIS is the thickest populated country in the world, and one of the most prosperous. Since the separation from Holland, in 1830, the population has increased 30 per cent. It is the only country in Europe where the males exceed the number of females, the surplus being 2 per 1000. Comparing the present statistics with those of forty years ago, we find a decrease of crime and pauperism, but an increase of insanity.

	Criminals.	Paupers.	Insane.
1840 .	1 in 585	1 in 1460	...
1860 .	1 ,, 650	1 ,, 1920	1 ,, 1350
1877 .	1 ,, 1010	1 ,, 2220	1 ,, 901

The decrease of crime would seem the result of education having risen 60 per cent since 1840; and in like manner we find the increase of insanity accompanied by a rise of 48 per cent in the statistics of suicide. How closely ignorance and crime are related is shown by the fact that 64 per cent of the criminals could not read. The ratio of married people, and of persons who speak French, has risen in thirty years as follows:—

	1844.	1870.
Married	36 per cent	38 per cent
Speak French . .	40 ,,	50 ,,

The number of German residents has increased rapidly, especially at Antwerp, whereas the British show a decline. Joint-stock enterprises were among the earliest promoters of Belgian industry. In 1851 there were 191 such companies, with an aggregate paid-up capital of £35,000,000.

AGRICULTURE.

Belgium may be termed a country of kitchen gardens, the average size of farms being 15 acres.

Farm.	Number.	Area.
Estates over 100 acres . .	4,000	650,000 acres
,, average 40 ,, . .	61,670	2,600,000 ,,
,, . ,, 8 ,, . .	270,000	2,160,000 ,,
Tenant farms of 10 acres ,	63,000	630,000 ,,
	398,670	6,040,000 ,,

Besides the above, there are 250,000 cottiers holding less than 2 acres each. The estates over 100 acres consist for the most part of forests, which cover one-sixth of the kingdom. The average of crops for the last ten years has been as follows:—

	Acres.	Crop.	Per acre.
Wheat . .	700,000	15,000,000 bushels	21 bushels
Oats, rye, etc. .	1,780,000	55,000,000 ,,	31 ,,
Potatoes . .	400,000	80,000,000 ,,	200 ,,
Flax . .	120,000	30,000 tons	5 cwt.
Beet . .	40,000	520,000 ,,	13 tons
Hay . .	440,000	650,000 ,,	1½ ,,

There has been a trifling increase in agriculture during the last twenty years, owing to the reclamation of 116,000 acres of waste land,[1] the returns showing:—

	1856.	1876.	Increase.
Under tillage .	4,450,000 acres	4,566,000 acres	116,000 acres

The nature of the soil and the condition of the peasant proprietors differ very much in the various provinces. In general, the land is far from fertile; but those parts called Polders, reclaimed from the sea by means of dykes, yield abundant crops, without manure, for twenty years running.

[1] Not far from Antwerp waste land may be purchased at 15s. per acre, but the cost of bringing it into cultivation is enormous.

Spade industry is more general than the plough, and M. Condroz advocates for this reason the system of small farms, because an acre of ground is made to produce the heaviest crops in succession. It appears, moreover, that the small farms are better tilled than the large ones. Nevertheless, as 250,000 families have to subsist on farms averaging $1\frac{1}{4}$ acre, it requires all the labour, economy, and perseverance of these frugal people to eke out a living. The small farmers often yoke their wives to the harrow, and all the children likewise take part in the field labours. The ordinary food is rye-bread, potatoes, butter-milk, and coffee; and on Sundays, bacon. Steam-ploughs and reaping-machines are unknown, as they could not be used on such little farms, but steam-threshers are bought by farmers' clubs, and hired out by the day.

The ordinary rent of land is 40s. an acre,[1] and the price £60. Such is the desire of the peasants to acquire a patch, however small, that a lot of two acres cut up in gardens sells for £300 sterling. The ordinary yield is £10 per acre. The working capital for a farm is estimated at £16 an acre, or double that usual in England. In-door servants are paid £15 per annum for men, and £10 for women; out-door, 1s. a day, except in harvest time. The trade returns for the last twelve years show that Belgium cannot raise enough grain for her population, but has to import to the value of £5,000,000 per annum.

[1] This is double the rent of fifty years ago, the average having risen as follows:—

1830 .	.	18s. per acre
1866 .	.	32s. ,,
1877 .	.	40s. ,,

The average price of land in East Flanders is £96 per acre, but that for the whole kingdom is only £63.

	1865-76.	Annual average.
Value of imported grain	£78,000,000	£6,500,000
,, exported grain	17,000,000	1,420,000
Surplus imported	£61,000,000	£5,080,000

The question naturally suggests itself whether, if half the rural population were to emigrate, and the whole kingdom were converted into farms of 300 acres, the soil would not produce more, and Belgium be richer? Belgian economists seem equally opposed to large farms and to infinitesimal subdivisions. They think farms of forty acres would answer best, yielding quite as much as at present, without the loss of labour, and the extra population which the present system entails. Half of the land-owners are able only to raise sufficient food for their own families; others cultivate beet-root, not only for the sugar factories, but for purposes of distilling, as the extract is used in London for making Madeira wine and giving a tone to sherry. Meadow and fallow pastures support nearly 2,000,000 cattle of all descriptions, but this is insufficient to supply meat for 5,000,000 inhabitants. Cattle are imported from Holland and Germany, the average value of such imports being as follows:—

	Meat.	Cattle.	Total.
1866-69	£56,000 per ann.	£780,000 per ann.	£836,000 per ann.
1874-77	680,000 ,,	1,950,000 ,,	2,630,000 ,,

Taking the items of meat and grain collectively, we find that Belgium pays annually 30s. per head of her population for food imported.

The farm-stock has increased 7 per cent in twenty years:—

	1846.	1866.
Horses	294,000	283,000
Cows	1,204,000	1,242,000
Carry forward	1,498,000	1,525,000

Brought forward .	1,498,000	1,525,000
Sheep . . .	662,000	586,000
Pigs . . .	499,000	632,000
Goats . . .	110,000	197,000
	2,769,000	2,940,000

The value of the forest-cuttings is £680,000 per annum, equal to 11s. per acre.

Summing up the annual value of agricultural products, we find—

	Value.
Grain	£14,000,000
Potatoes	5,000,000
Beet, flax, hay, etc. . .	5,000,000
Wool, meat, hides, etc. .	10,000,000
	£34,000,000

MINERALS AND MANUFACTURES.

These branches of industry employ 760,000 persons, Belgium having come to rival Great Britain in certain manufactures, and employing comparatively more operatives, with reference to population, than any other country in the world.

Coal.—The production has multiplied six-fold in forty years:—

	Tons.	Miners.	Tons per miner.
1836 . . .	2,100,000	32,000	70
1850 . . .	6,200,000	49,000	126
1878 . . .	14,900,000	81,000	185

The value was 17s. per ton in 1873, but has now fallen to 11s. The average profit is 3d. per ton, although it appears that 82 mines do not cover expenses. Miners' wages have been reduced from £46 to £37 per annum. The highest output yet attained was at Hainault in 1872, say 206 tons per miner.

Iron.—Mr. John Cockerill, from England, introduced the system of smelting with coke in 1816, and established at Seraing one of the finest ironworks in Europe. This gave such an impetus to the trade that it grew as follows:—

	Ore.	Pig-iron.	Operatives.
1836 . .	460,000 tons	150,000 tons	12,500
1860 . .	900,000 ,,	320,000 ,,	25,000
1873 . .	1,700,000 ,,	607,000 ,,	42,000
1878 . .	1,300,000 ,,	464,000 ,,	24,000

Notwithstanding the depression in this trade, it is worthy of remark, "that in so adverse a season of three years (1874-77) not a single ironmaster in Belgium failed." The operatives accepted a reduction of 60 per cent in wages, and thus enabled their masters to import pig-iron from England, make it into girders, send it back to England, and sell it at a profit.[1] Belgian ironmasters explain that they can undersell the British because their workmen are more thrifty and live on lower wages, the price of provisions being also less than in England. The value of the hardware industry of Belgium may be measured by the fact that the exports average £4,000,000 sterling, whereas ten years ago they were barely one-third.

Liege has grown up to be one of the great factories for arms. The value of this manufacture in 1829 was only £120,000, and now it falls little short of £1,000,000.

There are manufactures of zinc, copper, and lead, amounting in the aggregate to £2,000,000 per annum.

Glass has lately risen to great importance, as shown by the exports of this article:—

1867-68, average . . .	£590,000 per annum
1875-77, ,, . . .	1,550,000 ,,

Woollen manufactures have long been one of the chief

[1] In 1877 Belgium imported from Great Britain 68,000 tons pig-iron, and sent it back in the form of 46,000 tons of girders.

industries. In 1836 the cloth-mills of Verviers employed 40,000 hands, and produced £1,000,000 sterling worth of cloth. At present the woollen manufactures exceed £15,000,000 per annum, of which one-third is exported. The imports of raw wool average 110 million lbs.

Linen manufactures forty years ago amounted to £4,000,000 sterling, and employed 60,000 operatives. They increased so rapidly that in 1866 they employed 186,000 operatives, and the area of flax cultivation (150,000 acres) was double that of 1846. They have been, however, declining in recent years, and the exports at present do not exceed £800,000. The value of linen and hemp manufactures is about £6,000,000.

Cotton-mills have multiplied seven-fold in thirty years; they employ 100,000 operatives, consume 50 million lbs. raw cotton, and produce £5,000,000 worth of manufactures, which is 5 per cent more than required for home use.

Sugar-mills for beet-root constitute another important industry of recent growth; since 1846 the cultivation of beet has risen from 5000 to 100,000 acres, the average crop being 12 tons per acre. This allows Belgium not only enough sugar for home consumption, but a surplus for exportation, shown as follows:—

Sugar-export.	Tons.	Value.
1865-67	22,000	£510,000 per annum
1876-77	53,000	1,240,000 ,,

The Belgian manufactures may be summed up thus:—

	Operatives.	Product.
Textile fabrics . .	386,000	£26,000,000
Hardware and minerals	121,000	18,000,000
Sugar, beer, flour, etc.	254,000	27,000,000
	761,000	£71,000,000

COMMERCE.

The foreign trade has grown even more rapidly than in Great Britain, having multiplied twelve-fold in forty years.

	Imports.	Exports.	Total.
1831-1840, average	£8,200,000	£6,100,000	£14,300,000
1841-1850 ,,	13,400,000	11,400,000	24,800,000
1851-1860 ,,	29,400,000	28,400,000	57,800,000
1861-1870 ,,	54,700,000	48,800,000	103,500,000
1871-1878 ,,	97,250,000	81,900,000	179,150,000

The balance of trade has improved, as it was 25 per cent against the country forty years ago, whereas since 1860 it has not been as high as 20 per cent.

The above Table shows the general trade, of which 45 per cent consists of goods in transit for France and Germany. If we consider merely the special trade of Belgium, we find the increase has been only seven-fold, viz.—

	Imports.	Exports.	Total.
1831 to 1840 .	£8,200,000	£6,100,000	£14,300,000 per annum
1873 to 1877 .	55,220,000	44,110,000	99,330,000 ,,

The total returns for forty-eight years amount to £1,835,000,000 imports, and £1,602,000,000 exports, showing a balance against the country of only £233,000,000, or 13 per cent over exports. There is a steady inflow of bullion, the imports of bullion for the last ten years showing £45,500,000 over exports. The tonnage of entries has trebled in twelve years, most of the trade being on British bottom, namely 64 per cent of the total.

The Belgian marine does not increase, but rather declines.

	Vessels.	Tons.
1873	69	46,000
1876	48	45,000

Two-thirds of the tonnage belongs to steamers. The

average size of vessels is increasing: 660 tons in 1873, and 940 in 1876.

RAILWAYS AND CANALS.

Belgium has more railways for its size than any other country. The line from Brussels to Malines, opened in 1835, is incorrectly supposed to have been the first on the Continent,[1] although it was one of the earliest of any importance. The existing lines may be described thus :—

	Miles.	Cost per mile.
State lines . .	1307	£22,000
Company lines .	921	27,200
	2228	£24,000

The ordinary traffic returns show as follows :—

Passengers . .	51,000,000
Goods, tons . .	27,000,000
Receipts . . .	£5,150,000
Expenses . . .	3,250,000
Profits . . .	1,900,000

The total cost of construction up to January 1877 was £53,500,000, or £10 per inhabitant.

There are twenty-nine canals with an aggregate length of 530 miles, the longest being that from Brussels to Charleroy, forty-six miles. The canal tolls amount to £1,026,000 per annum (say £1930 per mile), and the expenses to £460,000, leaving a net profit of £1006 a mile. The total length of canals and navigable rivers is 1170 miles.

The first electric telegraph line was made by an English company from Brussels to Antwerp, in 1846. At present there are 3080 miles, which cost £140,000, or £45 per mile.

[1] See page 72.

There are more than 4000 miles of macadamised roads, so that Belgium is admirably provided with highways.

Railways	2230 miles
Canals and rivers . .	1006 ,,
Highroads	4200 ,,
	7430 ,,

This is equal to almost 1½ mile of highway for every 1000 inhabitants.

INSTRUCTION.

In thirty-three years the degree of public instruction has risen from 49 to 81, an improvement equal to 64 per cent. The proportion of conscripts for the militia who could read was as follows:—

	Could read.	Could not.
1843 . . .	49 per cent	51 per cent
1863 . . .	62 ,,	38 ,,
1876 . . .	81 ,,	19 ,,

It is plain the female average is equally high, the sexes being even at the schools. The increase of schools and scholars in thirty years has been as follows:—

	Schools.	Scholars.
1833	4230	371,000
1846	5747	472,000
1877	8910	902,000

There are four universities, at Brussels, Ghent, Louvain, and Liege, besides ten lyceums, and fifty gymnasia or high schools. The expenditure for public instruction is almost as high as in the United Kingdom, being 2s. 6d. per head of the population.

Since the abolition of the stamp duty (in 1848) the Press has multiplied its issues. In 1878 there were 124 newspapers in French, and 56 in Flemish.

There are nineteen public libraries; the largest being that of Brussels, with 200,000 volumes.

BANKS.

The Bank of Belgium was founded in 1835, with a capital of £1,200,000, and a charter for forty years. This was renewed in 1875, the capital being now £2,000,000. The Flanders Bank was established at Ghent in 1836, with a capital of £400,000. The National, founded in 1850, is the State bank, with a capital of £3,000,000 and the right to emit paper for three times its reserve of bullion, the emission in recent years averaging £13,000,000, and the reserve £5,000,000. Its dividends average 3½ to 4 per cent per annum. The savings banks show 130,000 depositors, holding £2,500,000, or nearly £20 each.

The returns of the mint show the coinage of the last fifty years thus:—

	Silver.	Gold.	Total.
1830-50 . . .	£4,240,000	£580,000	£4,820,000
1851-70 . . .	10,830,000	6,960,000	17,790,000
1871-77 . . .	7,320,000	9,200,000	16,520,000

This shows that the coinage of the last six years was almost equal to twenty years preceding.

WEALTH AND FINANCES.

Everything indicates the soundness and prosperity of this little kingdom, which started into existence in 1830. Its capital and income are as follows:—

	Capital.	Income.	Ratio.
Agricultural . . .	£335,000,000	£34,000,000	10 per cent
General and commercial .	575,000,000	92,000,000	16 ,,
	£910,000,000	£126,000,000	14 ,,

This gives an average of £170 capital and £23 income

for each inhabitant, the highest ratio in Europe after Great Britain, Holland, and France.

From 1865 to 1875 the State expended £20,000,000 on railways and such works, which has caused the expenditure and public debt to rise as follows:—

	Expenditure.	Debt.
1864-65 . . .	£7,510,000	£24,600,000
1874-75 . . .	11,880,000	40,244,000

The National Debt is only 4½ per cent compared to the capital of the kingdom, and the incidence of taxation is very light, say 9½ per cent of the national income, being the lightest of all countries in Europe except Scandinavia. When we remember how much Belgium suffered under the Spanish yoke, it is interesting to compare the condition of the two countries; Belgium in the highest prosperity, Spain reduced so low that the average income of her people is less than half that of the Belgians.

HOLLAND.

It has been truly said that the Dutch built Holland, for most of it has been reclaimed from the ocean by means of colossal polders or dykes, which are estimated to have cost £300,000,000 sterling. Nothing but the vigilance of the people can prevent the whole country from being submerged, some of the polders being 24 feet lower than sea-level. These polders are generally 30 feet high, 70 feet broad at the base, and built of Normandy stone, or of peat and timber. It is proverbial that there is no country for which Nature has done so little, and man so much. The indomitable energy of the Hollanders is further shown by their heroic struggles against Spain and France, in which the world beheld a country no bigger than Wales resist the armies of Philip II. and Louis XIV. Nor have they degenerated; they are as industrious and patriotic as their ancestors, and, moreover, so thrifty that there are neither beggars nor bankrupts.

The population has not increased so rapidly as in Belgium, but the returns show a great improvement since twenty years ago.

1860 . . .	3,309,000 inhabitants
1876 . . .	3,865,000 ,,

In this interval the birth-rate has risen, and the death-rate declined, so that the annual increase is one-half more than it was, viz.—

	1860-61.	1875-76.
Births per 1000 inhabitants . .	35½	38½
Deaths ,, ,, . .	27	26
Increase	8½	12½

The death-rate is nearly on a par with Prussia; the expectation of life compared with England shows thus:—

Age.	Holland.	England.
At 20 . . .	39 years	40 years.
,, 50 . . .	20 ,,	21 ,,

In fact, the climate is by no means so unhealthy as generally supposed. The cold in winter is greater than in England, not only the rivers but the Zuyder Zee being frozen. At such season the women may be seen skating to market.

AGRICULTURE.

About two-thirds of Holland is cut up into 100,000 farms, averaging 50 acres each. The official returns show—

	Acres.
Pasture lands	3,250,000
Grain	1,310,000
Potatoes, flax, etc. . . .	710,000
Woods	490,000
Cultivated	5,760,000
Lakes, canals, etc. . . .	2,380,000
Area of Holland . . .	8,140,000

The rural population comprises 65 per cent of the total, and most of the farmers are proprietors. There are tenant-farmers in the province of Groeningen, on the estates formerly owned by the convents; the tenancy descends by right of primogeniture, and the holdings can never be subdivided. The landlord cannot raise the rent or disturb the Meejer or tenant, whose wife also becomes a co-Meejer on her marriage. If the family die out the lands revert to the landlord. Notwithstanding the large exportation of cattle to England, and the disastrous rinderpest of 1866-68, there has been an increase of about 10 per cent of live stock in fifteen years, viz.—

	1860.	1875.	Increase.
Horses . .	243,000	260,000	7 per cent
Cows . . .	1,290,000	1,466,000	13 ,,
Sheep . .	866,000	941,000	9 ,,
Pigs . . .	270,000	338,000	25 ,,
Goats . .	115,000	153,000	34 ,,

The value of the above stock is £33,000,000. The cattle are kept in the swamps till November, when they are lodged in sheds.[1] A good cow gives 80 lbs. butter and 180 lbs. cheese per annum.

A farm of 50 acres will carry 15 cows, 20 sheep, and a horse, and require two farm-servants, whose wages average £10 a year. The price of land is about £60 an acre, but it may be rented for 40s., out of which the landlord has to pay 10s. per acre land-tax. The pastures are so rich that the lean kine from Denmark and Germany soon fatten, attaining sometimes a weight of 25 cwt. The export of cattle in 1869 was double that of 1849, Great Britain taking two-thirds. At present it exceeds 500,000 cows and sheep yearly, and the value of this item has almost trebled in ten years. The average from 1871 to 1875 was £1,600,000 per annum, but it has declined since the Americans began to export cattle in 1876. Butter and cheese form a still more valuable item of exportation—viz. 49,000 tons, worth £2,500,000, per annum. The production and consumption are as follows :—

	Home consumption.	Exportation.	Total.
Butter . .	7000 tons	23,000 tons	30,000 tons
Cheese . .	14,000 ,,	26,000 ,,	40,000 ,,

The total annual proceeds of the cattle farms are about £25,000,000 sterling.

The cultivation of grain is a secondary matter, the area under all crops being barely 2 million acres, viz.—

[1] They are ranged *tête-à-tête* down the sheds, and their tails tied up behind by pulleys from the roof.

	Acres.	Value of Crop.	Per acre.
Wheat . . .	240,000	£1,500,000	£6
Rye . . .	500,000	2,400,000	5
Oats . . .	280,000	1,400,000	5
Potatoes . .	330,000	3,600,000	11
Beet-root . .	36,000	480,000	13
Flax . . .	200,000	2,650,000	13
Barley . . .	122,000	980,000	8
Beans, etc. . .	316,000	2,340,000	7
	2,080,000	£15,230,000	£7

The total grain crops average 40,000,000 bushels, which does not suffice for the population. The trade returns of the last ten years show—

	Value.
Imported grain . . .	£37,460,000
Exported ,, . . .	9,210,000
Surplus imports . .	£28,250,000

It appears, therefore, that Holland has to pay £3,000,000 yearly for grain. Few steam-ploughs or reaping-machines are used, but steam threshers and winnowers are becoming general. Every year, in May, 100,000 farm-labourers arrive from all quarters to aid in the tillage, say one man for every eighteen acres under crops. The young women rake and hoe the ground, but are never yoked to the harrow as in Belgium. The average yield per acre is 27 bushels for wheat, 31 for other grain, and 160 for potatoes. In sowing grain the farmers sow less per acre than in England, and the yield is ordinarily fifteen-fold. Besides agriculture there is a valuable industry in rearing flowers. There are 600 acres under tulips, the value exported reaching £100,000 per annum.

Summing up the value of imported and exported agricultural products, the account stands thus :—

	Exports.	
Cattle . . .	£1,350,000	per annum
Butter and cheese .	2,330,000	,,
Flax	1,100,000	,,
	£4,780,000	,,
Grain imported . .	2,820,000	,,
Balance of exports .	£1,960,000	,,

The farming wealth of Holland reaches £434,000,000, and the annual product of the farms £41,000,000.

INDUSTRIES AND MANUFACTURES.

The Dutch found their country had no stone, no iron, no coal, no timber, and therefore they began the world as fishermen. Amsterdam is built of herring-bones, as the adage goes, for no people have ever equalled the Dutch in the preparing and preserving of fish. In the sixteenth century they had 1500 vessels engaged in the Shetland herring-fisheries, and 260 whalers in the Arctic Seas, employing 14,000 seamen. Injudicious restrictions about the size of the barrels and the capacity of the busses, or smacks, as also severe taxes, contributed to bring this trade so low that Holland had only 80 busses in 1854. The number has, however, since risen to 108, which take annually £150,000 worth of fish in the Northern seas, besides the herrings of the Zuyder Zee.[1]

Diamond-cutting is another pursuit in which the Dutch have always excelled, the actual number of diamond-cutters at Amsterdam being 700. Meerschaum pipes are also an important industry, occupying 900 persons.

Sugar is refined on a large scale, partly for home use, partly for exportation to Russia, but there is little or no

[1] In 1861 the number of herrings taken was 25,000,000, or one-third more than at present.

increase in recent years, the export averaging 68,000 tons, worth £2,250,000.

Gin is manufactured principally at Schiedam, which town has 200 distilleries. The exports during the last ten years averaged 5 million gallons. Textile manufactures have grown 50 per cent in the last ten years, and this, as well as the increase of railways, accounts for the fact that the consumption of coal has increased 60 per cent in the same period.

The growth of cotton and woollen manufactures is shown by the importation of raw cotton and wool, and of yarn, in value as follows :—

	1865-67.	1876-77.	Imported for 10 years.
Wool and yarn	£1,410,000 p. an.	£1,860,000 p. an.	£19,500,000
Cotton and yarn	2,760,000 „	4,120,000 „	41,000,000
	£4,170,000 „	£5,980,000 „	£60,500,000

Nevertheless, the production is unequal to the demand, for, whereas ten years ago the value of cotton and woollen goods exported was over the imports, the reverse is now the case, and Holland does not make enough for herself. Ironworks have multiplied five-fold in the last ten years. Most of the factories formerly worked by windmills have now adopted steam-power. The total value of manufactures is about £44,000,000 sterling.

CANALS AND RAILWAYS.

Holland derives much of her wealth and importance from her admirable system of canals, constructed without regard to labour. Most of them are used for highways, the number of Trekshuits or passenger boats being 5600, besides 15,000 "flats" for conveyance of cargo. The Helder canal, completed in 1825, after six years of labour,

is navigable for vessels of 1000 tons, or 46-gun frigates; it is 50 miles long, 40 yards wide, and 20 feet deep, allowing two merchantmen to pass abreast, and its cost was £750,000. The returns for 1877 show that 5000 vessels, exceeding an aggregate of 1,500,000 tons, passed through the Helder canal in that year, 45 per cent being steamers. The Maestricht canal is navigable for vessels of 800 tons. Another, called the Y, or North Sea canal, was opened in 1874 at a cost of £2,000,000, bringing Amsterdam within 15 miles of the sea; its width is 80 yards, and its depth 23 feet. This canal reclaimed 15,000 acres from the sea, and took eleven years in construction, being 14 miles in length. In 1852, the English company that had taken the contract for draining Haarlem Lake completed the work, which took some enormous steam-pumps thirteen years to accomplish. The lake was 15 feet deep over an area of 60,000 acres, or 90 square miles; the land was sold by auction for an average price of £16 per acre, and gives excellent crops.

Herr Van Diggeln, in 1849, proposed to drain the Zuyder Zee, at a cost of £9,500,000, by making a ship canal through the centre, with dykes 15 feet high. The inhabitants of the numerous seaport towns complained that it would leave them high and dry, the Zuyder Zee being their only means of living, which induced the Government to oppose such a violent change. The project is, however, revived by a joint-stock company, who estimate that 10,000 horse-power steam-engines can pump the Zuyder Zee dry in twenty-one months for £9,000,000 sterling, as it is only 12 feet deep, and covers an area of 600 square miles. The projectors expect to sell 390,000 acres of land reclaimed, at an average of £42 per acre, in 50,000 farm-lots of eight acres, to support a population of 250,000 souls.

Besides the navigable canals, there are many used only for drainage, the water being raised by windmills from one level to another, till discharged into the sea. Some of these windmills are so powerful that they can raise 700 tons of water per minute a height of four feet. The maintenance of the canals and dykes is attended to by a body of State engineers at a cost of £500,000 per annum.

Railways are of very recent construction:—

1850	. . .	110 miles in traffic.
1860	. . .	197 ,, ,,
1878	. . .	1040 ,, ,,

The last includes 510 miles built by Government in the last ten years, at a cost of £18,000 per mile.

Few countries can compare with this for highroads made of hard bricks called klinkers, of Haarlem clay.

COMMERCE.

In the last thirty years trade has increased 150 per cent.

	Imports.	Exports.	Total.
1849 . .	£22,100,000	£21,900,000	£44,000,000
1877 . .	61,700,000	44,300,000	106,000,000

These returns are merely the "special trade," not including goods in transit. The balance of trade for the last ten years shows £110,000,000 against Holland, the imports being 27 per cent over exports.

Imports	£495,000,000
Exports	385,000,000
Balance against Holland . .	£110,000,000

In forty years since the separation from Belgium the Dutch merchant shipping has quintupled.

	Vessels.	Tons.
1837 . . .	1394	112,000
1868 . . .	2116	394,000
1878 . . .	1558	535,000

In 1670 Sir W. Petty estimated that the Dutch possessed one-half the shipping of the world: at present their mercantile fleet is hardly 2½ per cent of the total. The arrivals in Dutch ports have almost doubled since 1865, but the great increase is in foreign shipping.

	Dutch Flag.	Foreign.	Total.
1865 . .	500,000 tons	972,000 tons	1,472,000 tons
1876 . .	664,000 ,,	2,026,000 ,,	2,690,000 ,,

No less than 50 per cent of the total tonnage is British, 26 per cent being Dutch, and 24 per cent of various flags. Thus the national shipping barely suffices for one-fourth of the trade of Holland. It is observed that 40 per cent of the vessels clearing from Dutch ports leave in ballast, whereas the vessels arriving in ballast form only 3 per cent of the tonnage. This is accounted for by the transit trade with Germany, the figures for which show as follows:—

Upward to Germany . .	16,000,000 tons per annum.
Downward from do. . . .	8,500,000 ,, ,,

One-fourth of the downward traffic consists of coal and timber.

INSTRUCTION.

People who love liberty love letters, and hence we find the Dutch have always given great attention to schools. It has been often said that every man and woman in Holland can read and write. Probably all can read, but the marriage registers show (1870) that 7 per cent cannot write.

	Scholars.	Cost per head.	Expenditure.
Primary schools . .	304,000	1s.	£15,000
Latin „ . .	1,250	50s.	3,200
Universities . . .	1,570	£15	24,500
	306,820	2s. 10d.	£43,000

The increase of schools in the last forty years has been thus:—

	1835.	1870.	Increase.
Schools . . .	2,830	3,614	27 per cent
Scholars . . .	304,000	456,000	50 „

The school children form 13 per cent of the population, and the sexes are represented by 50 male to 43 female children.[1]

In 1845 there were but 25 newspapers; in 1875 the number had risen to 226.

Foremost among literary associations is the Society for Public Good, founded in 1784, which provides reading-rooms, lectures, and savings banks for the working-classes. There are 220 branches in the various districts of Holland, supported by 14,000 members.

BANKS.

The Netherlands Bank has the sole right of emission; limit £25,000,000, the specie reserve to be at least 40 per cent of the notes in circulation. Capital, £2,000,000; emission, £16,000,000; deposits, £5,000,000. The savings banks show £4,000,000, with an average of £30 to each depositor.

In the seventeenth century the Dutch bankers negotiated numerous State loans, and Sir William Temple saw them frequently with tears in their eyes, because their money was repaid them and they could not find means for

[1] Later estimates put down the school ratio of Holland at 15 per cent of the population.

investment.[1] In the following century, during the American war, they lent £60,000,000 sterling to France and England, besides £20,000,000 to other States. At present the Dutch capitalists hold £320,000,000 sterling of foreign loans, bringing them an income of £14,000,000.

FINANCES AND WEALTH.

Holland resembles Great Britain in many respects, especially in the fact that her own National Debt is much less than the amount of her money lent to foreign nations. The income derived from such loans is more than five times the sum (£2,500,000) annually required for interest of the debt of Holland. Since 1848 the public debt has been reduced from £120,000,000 to £79,500,000; but as the interest is only 3 per cent, the wisdom of redeeming it may be questioned. Holland has always been one of the heaviest taxed countries in the world. When a fish is put on the table, it is said to have paid the fisherman once, and the State six times. These taxes have driven some of the richest Dutch bankers to settle in England. At the close of the nineteenth century Holland will probably have redeemed her National Debt.

The expenditure has risen from £7,000,000 per annum thirty years ago to an average of £8,500,000 for the last seven years, a portion of this increase being caused by the construction of railways, in which the Government has expended £9,000,000. Another drain upon the Treasury was produced by the emancipation of slaves in the Dutch West Indies in 1862, when the State paid £24 a head for them to their masters.

Holland shows the following statement of capital and income :—

[1] There were no Turkish or Peruvian loans in those days.

	Capital.	Income.	Ratio.
Agricultural . .	£434,000,000	£41,000,000	9½ per cent
General and commercial	928,000,000	84,000,000	9 ,,
	£1,362,000,000	£125,000,000	9 ,,

This gives an average of £345 capital and £33 income for each inhabitant, Holland being the only European country which shows the same degree of wealth as Great Britain. The Dutch obtain the lowest interest on capital; for although Holland is 50 per cent over the value of Belgium, the national income is almost the same. It is in every respect the least encumbered of all countries, the total of mortgages being only £40,000,000, and the interest never passing 5 per cent.

Dutch Colonies.

Java is the most important, as the island contains 18,000,000 inhabitants, and pays Holland £3,000,000 net annual tribute. Governor Van-den-Bosch planted 50,000,000 coffee trees in 1831, and so actively promoted industry that the products of Java have quintupled.

The colonies maintain an active trade with Holland, chiefly through the Java Company. This company was founded by a number of merchants in 1824, the late king subscribing for a large number of shares, and guaranteeing out of his private fortune a dividend of 14 per cent. His Majesty had to pay most of the dividends down to 1830, but the company is now flourishing, and sells annually at Amsterdam the following colonial produce:—

	Quantity.	Value.
Coffee . .	95,000 tons	£3,300,000
Sugar . .	220,000 ,,	4,600,000
Tin . . .	7,000 ,,	530,000
Spices, etc. .	...	300,000
		£8,730,000

The company, whose chief office is at Amsterdam, and principal factory at Batavia, has a paid-up capital of £3,150,000, and pays usually 10 per cent annual dividend.

SCANDINAVIA.

THE three kingdoms of Sweden, Norway, and Denmark bear a certain resemblance to the United Kingdom,[1] while it may be said that there is no part of Europe advancing more steadily in trade, population, and national wealth.

Population.	Denmark.	Sweden.	Norway.	Total.
1830 . .	1,993,000	2,882,000	1,092,000	5,967,000
1875 . .	1,785,000	4,430,000	1,807,000	8,022,000

But for the spoliation of Denmark in 1866, when Germany stripped her of Sleswig-Holstein, the aggregate population of the three kingdoms would now be over 9,000,0000. The present population shows an increase of 93 per cent, since the beginning of the century, and the average gain from births over deaths in the last ten years may be set down thus :—

	Births per 1000 inhab.	Deaths.	Increase.
Norway . .	32	20	12
Sweden . .	33	20	13
Denmark . .	28	17	11
General average .	32	19	13

The ratio of illegitimate births is very high, especially in Sweden, being 8½ per cent for all Scandinavia, or double the rate that prevails in England.[2] The death-rate is the lowest in Europe; giving an average life-term of two years longer than in Great Britain, and four years longer than France. The marriage-rate is 15 per 1000 annually, which is the lowest in Europe, except Ireland, and is 2 per 1000 below England and Germany.

[1] They were united under Margaret of Waldemar, but the union lasted only sixty years.

[2] The Swedish rate is now 9½ per cent, against 8½ previous to

The increase of trade was very slow until 1850, which arose chiefly from the restrictions on imports, and the futile efforts to turn farmers into manufacturers. During the last thirty years the progress has been as follows:—

SCANDINAVIA.

	Imports.	Exports.	Total.
1850 .	£7,310,000	£7,790,000	£15,100,000
1876 .	37,380,000	27,720,000	65,100,000

In twenty-six years there was an advance of 333 per cent, equal to 13 per cent per annum. The increase of tonnage is not equalled by any country in the world. On the abolition of the British Navigation laws the tonnage of Scandinavian vessels doubled. The rate of progress is still marvellous; the returns for 1876 being 57 per cent over those of 1868, viz.—

	1868.	1876.	Increase.
Danish flag .	174,000 tons	255,000 tons	46 per cent
Swedish flag .	303,000 ,,	525,000 ,,	73 ,,
Norwegian flag .	948,000 ,,	1,436,000 ,,	51 ,,
	1,425,000 ,,	2,216,000 ,,	57 ,,

The increase of commerce and shipping is specially noted since the abolition of the Sound-dues in 1857 (see page 358). The balance of trade for ten years was £61,000,000 against Scandinavia, or £6,100,000 per annum; yet the imports of specie slightly exceeded the exports in that period.

Public instruction has always been so well attended to that there is little progress to report. Fifty years ago Laing found the working classes as well educated as in Scotland or Prussia, any man or woman that could not read being debarred all civil rights: this class did not reach to 1 per cent of the population.

Iceland, which nominally belongs to Denmark, but is

actually a republic, preserves the language and letters introduced from Norway a thousand years ago. The innkeepers talk Latin with their guests, and the peasant, as he sits by his fireside, reads aloud the verses of Virgil or Homer to his family, or repeats the Sagas that perpetuate the heroic deeds of his ancestors. In 1804 Iceland comprised 4750 farms, with 47,000 inhabitants. Since then it has almost doubled in population and farm-stock, but it produces no grain, and supports with difficulty its scanty number of inhabitants. But it deserves a special mention for the classical tastes of its people, who have maintained two printing-presses since 1529.

WEALTH OF SCANDINAVIA.

At the beginning of the century these three northern kingdoms were so poor as to count for little in the public wealth of Europe. Industry and frugality have almost insensibly led them to a high degree of affluence, the average capital and income of the inhabitants being far above the level of most other countries.

	Agricultural capital. Millions sterling.	Income. Millions sterling.	General capital. Millions sterling.	Income. Millions sterling.	Total capital. Millions sterling.	Income. Millions sterling.
Sweden . .	340	38	163	20	503	58
Norway . .	140	13	95	18	235	31
Denmark .	230	27	120	14	350	41
	710	78	378	52	1088	130

Distributing the capital and income according to population, we find that Denmark occupies the first place, as follows:—

	Capital.	Per inhab.	Income.	Per inhab.
Denmark . .	£350,000,000	£192	£41,000,000	£23
Norway . .	235,000,000	132	31,000,000	17
Sweden . .	503,000,000	114	58,000,000	13
Total .	£1,088,000,000	£135	£130,000,000	£16

Nearly one-third of the income of Norway is derived from her merchant fleet, which reaches 1½ million tons, thus giving her a greater income for population than the more important kingdom of Sweden. The earnings of the Norwegian shipping are equal to £5 per head of the population, whereas the merchant fleet of Great Britain earns little over £1 per inhabitant of the United Kingdom. As regards Denmark, two-thirds of the income is derived from agriculture, and the same is true of Sweden.

The increase of savings bank deposits in all Scandinavia since 1860 has been as follows:—

	Deposits.	Per inhab.
1860	£4,912,000	13 shillings
1878	21,305,000	53 ,,

This only represents a small portion of the national savings, for we all see (page 340) that the Swedish peasants purchase annually nearly a million acres of land, of which they clear one-fifth for cultivation; while the small farmers of Denmark are equally provident and industrious. The Scandinavian people have, for at least three generations, lived much under their income, and hence the accumulation of wealth goes on increasing in geometrical ratio. They have the lowest public debt in the world, £24,000,000 sterling (say 2¼ per cent of their capital), which is little more than half the value of their railways. The incidence of taxation is the lightest in the world, the total expenditure of the three kingdoms, including local taxes, summing up barely £11,000,000, say 8½ per cent of the national earnings.

Rural mortgages affect 40 per cent of Denmark and about one-third of Sweden, but as the interest charged seldom exceeds 6 per cent, the burthen on the farmers is comparatively light.

SWEDEN.

After the peace of Vienna the condition of Sweden was little better than it had been a century before; the national destinies seemed tending downwards. The whole kingdom consisted of 1200 large estates, on which the nobles lived in a style of becoming opulence and hospitality. There was no middle class, no trade, no manufacturing industry, except felling timber and smelting iron. Agriculture was so neglected that not enough grain was raised for the food of the people, and the traveller would often go 80 or 100 miles without meeting other sign of life or industry than a hut in the midst of a forest of pines. In 1828 many of the absurd laws were repealed that had retarded progress, and the effect was soon visible. Previous to that time the importation of many useful articles of merchandise was prohibited by law, in deference to the farming classes, but was tacitly allowed in a contraband manner. Since 1830 population, trade, and internal wealth have advanced with great rapidity.

The Swedes are for the most part industrious, orderly people, but they consume prodigious quantities of potato-brandy; in 1829 there were 168,000 stills, which produced 30 million gallons, or 9 gallons per inhabitant; the consumption has, however, since fallen to 2 gallons per head. Crime was stated at a very high ratio by Laing, who showed that the proportion of criminals was 1 in 134 of the population, or ten times the average of England. It appears, however, that some of the criminals were flogged (1828) according to law for having failed to repair the roads; others had forgotten to get their chimneys swept. The peasants have primitive habits, and make most of the

articles for household use. Their food consists chiefly of oaten bread, salt-fish, and pork. Twice a year they bake their bread and salt their meat, and the loaves are usually broken with an axe instead of being cut. The fisheries, though not so productive as in the eighteenth century, are said to yield £600,000 worth of fish annually, which is mostly consumed at home. *Battues* of large game occur periodically, the annual slaughter averaging 110 bears, 90 lynxes, and 50 wolves.

However wild and sterile the general aspect of the country, Nature has bountifully endowed Sweden with two of the first requirements of civilised life—timber and iron. The first is found superior to that of Canada, the second is unsurpassed in the world.

The first book-shop was opened in the seventeenth century. At present there are 100 printing-offices, and 80 newspapers, of which 19 appear at Stockholm. The University of Upsal has a library of 50,000 volumes, founded by Gustavus Adolphus, who sent hither whatever books he picked up in his conquests. The Swedish Academy of Science, so renowned in Europe, has published 100 volumes since its foundation in 1739. The botanical garden, founded by Linnæus at Upsal, has a library of 40,000 volumes.

Sweden has 3007 miles of railway, of which one-third are Government lines; total cost, £21,000,000.

The Gotha Canal, opened in 1800, is a noble work, only three miles in length, but cut for some distance through a rock 150 feet high. It had been attempted by various kings of Sweden without success, and was finally taken, in 1793, by a joint-stock company, which completed it after seven years, at a cost of only £72,000. It has eight locks, and is navigable for vessels of 100 tons not drawing over

6 feet. It lends great aid to internal traffic, and pays a dividend of 12 per cent per annum to the company. There is another canal of more recent date connecting Lake Meler with the German Ocean.

The Statistical Tables of Sweden for 1874, compared with 1860, afford a striking proof of the prosperity of the nation:—

	Increase.
Assets of banks	275 per cent
Deposits in banks	510 „
Shipping	75 „
Imports	150 „
Exports	100 „
Manufactures	137 „
Population	15 „

Hence it appears that arts, industry, commerce, and wealth increased ten or twenty times as fast as population.

AGRICULTURE.

The first census taken in the reign of Bernadotte showed that only one-eighthieth of the area of Sweden was cultivated:—

	Acres.
Meadow and crops	1,363,000
Lakes	14,224,000
Forest, mountain, etc.	93,661,000
	109,248,000

Land was of trifling value; the 1200 noblemen had under them 65,300 tenants, occupying as many farms, the whole supporting an agricultural population of 1,444,000 souls. Thus each farm averaged 21 acres and supported 22 persons. Each farmer sowed but a bushel of grain, for which he reaped in good years eleven-fold, and in bad only five. The crops in the years 1801-12 ranged from 270,000 to 560,000 bushels. As this would only feed from 50,000 to 100,000 souls, it was necessary to import grain from

Denmark and Dantzig, failing which the peasants ground the inner bark of the pine and mixed it with rye for bread.

In 1818 the nobles, being reduced to great straits by the splendid hospitality of their mode of life, began to sell their estates to the peasants and others who had saved money. Within twenty-two years, that is until 1840, the official records showed—

	Acres.	Amount.	Per acre.
Estates sold . .	15½ million	£1,100,000	17 pence

The peasants at once set about cultivating the soil, and sawdust was never used for making bread after 1820. On the contrary, the crops were so much increased that, instead of importing cereals, Sweden now began (1820) to ship 100,000 tons of grain yearly to other countries. When Laing visited the country in 1830 he found "the peasantry in a better condition than in Scotland:" the poorest earned a shilling per day on farms. In 1837 the crops exceeded ninety times what they had been only twenty years previous, and summed up 44,000,000 bushels. The breed of sheep was also improved by the introduction of merinoes.

The subdivision of land at one period threatened to overwhelm the country with pauper proprietors. In 1840 the average size of cultivated farms was only 28 acres, but this varied in different provinces. In Dalecarlia it was not uncommon to see estates sold for 7s., about a quarter of an acre in extent.

The area of the kingdom is now distributed as follows:—

Class.	Number.	Cultivated. Acres.	Uncultivated. Acres.	Total. Acres.	Average. Acres.
Landowners .	204,000	9,000,000	21,000,000	30,000,000	150
Tenants . . .	40,000	1,500,000	14,500,000	16,000,000	400
Forest owners .	10,000	1,000,000	39,000,000	40,000,000	4000
State forests .	...	...	9,000,000	9,000,000	...
	254,000	11,500,000	83,500,000	95,000,000	340

Land is usually divided into "mantals" of 1600 acres, which the large proprietors let to tenants in lots of 400 acres each. A farm of this description has usually 40 acres under crops, and the rest forest. The independent farmers ordinarily own about one-tenth of a mantal, which they may have bought as uncleared forest for 2s. per acre, say £15 for a farm. They plough up fifty or sixty acres, and leave the rest under wood, where their cattle may freely go at large. These men preserve the simple habits of the peasants of fifty years ago, and it is not uncommon to meet men worth £5000 or upwards in the plain garb of wood-cutters. On each farm there is a number of cottiers, who have cottages with a few acres of land, to till for themselves in return for their services on the farm. Grain seldom yields more than five-fold, and the ordinary grain crops sum up about 70,000,000 bushels. The farmers say "three years of good crops, three years of bad crops, and the seventh year no crop at all," the country suffering as frequently from heavy rains as Spain does from drought.

The increase of agriculture has been as follows :—

	Acres.	Crops, grain, and potatoes.
1812 . . .	1,363,000	500,000 bushels
1837 . . .	4,830,000	44,000,000 ,,,
1876 . . .	11,590,000	119,000,000 ,,

Agriculture advanced between 1812 and 1837 at the rate of 140,000 acres, and in the last forty years 165,000 acres per annum. The returns for 1874 showed that there were under grain and pasture 254,000 farms, supporting an agricultural population of 3,000,000, or 68 per cent of the inhabitants. Each farm may therefore be said to average 15 acres under crops and 32 acres meadow, supporting twelve persons. Grain is raised sufficient for home consumption, mostly oats and barley, of which, moreover, there is an annual surplus for exportation.

The returns of farming-stock, as compared with 1837, show the following increase:—

	1837.	1876.	Increase.
Horses . . .	385,000	461,000	20 per cent
Cows . . .	1,658,000	2,189,000	33 ,,
Sheep . . .	1,413,000	1,589,000	12 ,,

The number of cattle shipped annually exceeds 50,000 head, mostly for the English market.

In 1874 the area under forest was 43,500,000 acres, which is more than the extent of England, and the felling of timber has for some years averaged 1,150,000,000 cubic feet per annum. Meanwhile the forests near the iron mines are nearly exhausted, and the Government has introduced regulations for the preservation of timber in the way of planting. About one-fifth of the forests belongs to the State. The exportation of timber averages 120,000,000 cubic feet of planks, and 40,000,000 spars, masts, rafters, etc.

The agricultural income of Sweden is about £38,000,000, of which £28,000,000 are from tillage and pastoral industries, and £10,000,000 from wood-cutting.

MANUFACTURES AND MINERALS.

The decree of 1765 prohibiting all manufactures, with the view of promoting agriculture, had a very disastrous effect. Factories of steel and of silk were closed, and the skilled artisans took refuge in Russia. After an interval of twenty years the insane law was repealed, but the country did not soon recover the blow. Prohibitory duties upon foreign merchandise existed in full force till 1828. No sooner were they abolished than manufactures increased in a surprising manner. In 1839 the official returns showed an increase of 35 per cent over ten years before. In 1876 the Swedish manufactures reached £10,250,000 sterling, counting merely the products of 2825 factories, viz.—

Worked by steam	684
,, by water	640
,, by horse, etc. . . .	1501
	2825

Cotton-mills consume about 10,000 tons of raw cotton yearly. The factories of Norkoping use 4,000,000 lbs. of wool, but this is so far short of requirements, that Sweden imports £3,000,000 worth of woollen fabrics per annum. Silk manufacture has made considerable progress; the amount in 1839 was but £40,000, to-day it exceeds £300,000. There are 90 tobacco factories, which consume 4000 tons tobacco yearly, chiefly in making cigars. Distilleries are a very flourishing industry, producing 10,000,000 gallons potato-brandy, worth £1,100,000 sterling. The above factories, not counting ironworks, comprised in 1871 a total of 42,400 operatives. Since then the manufacture of wooden matches at Jonkoping has become of importance, besides which there are thirty smaller factories, and the export of wooden matches is over 6000 tons per annum. Coal abounds in Sweden, but costs more to raise than the price of coal imported from England.

Swedish iron has long been considered the best in the world, and especially suited for making Bessemer steel. This is partly from the quality of ore, partly from the smelting by wood instead of coal. The supply of iron is inexhaustible. Tuberg, a hill of 370 feet high, is simply a mass of magnetic iron; it is described as "a source of riches to remotest posterity," although the ore is not very pure, yielding from 20 to 30 per cent (which is considerably below the average in England). Persberg is another mountain of ore, containing thirteen mines; but the best ore is that of Dannemora, which produces 4000 tons iron annually,

the shaft (500 feet deep) being worked by blasting. The production of iron has increased as follows :—

1812	65,000 tons
1850 . . .	140,000 ,,
1870 . . .	292,000 ,,
1876 . . .	340,000 ,,

This does not include 78,000 tons Bessemer steel. The total number of miners and hands in the 200 mines and 1400 smelting-works usually ranges from 18,000 to 20,000.

Copper-mines in Dalecarlia have been worked for a thousand years, especially those at Fahlun. The yield, however, has steadily declined, from 4000 tons per annum in the seventeenth century to 500 tons in recent years. The Fahlun mines now count but 500 workmen ; the ore is inferior. All the copper-fields of Sweden now produce about 1400 tons, say 1 per cent of the copper-crop of the world. Silver exists in many parts of Sweden, mixed with lead. Kongsberg was reputed the richest silver-mine in Europe, having produced a block, almost pure, weighing 600 lbs., and worth £1800 sterling. At present the total yield of silver in Sweden is under one ton per annum, say £6000 worth, or one day's produce of the Nevada or Peruvian silver-fields. Zinc is of some importance, the yield being over 40,000 tons yearly. There are numerous mines of lead, iron, and copper in Lapland, which can only be worked in midsummer, as the cold at other times congeals the engines.

COMMERCE.

The growth of commerce in the early part of the century was slow :—

	Imports.	Exports.	Total per ann.
1801 . .	£1,369,000	£1,008,000	£2,377,000
1830-1840 .	1,330,000	1,570,000	2,900,000
1865-1866 .	6,020,000	5,940,000	11,960,000
1875-1876 .	15,230,000	11,820,000	27,050,000

For the first forty years no perceptible progress was made. In the interval from 1840 to 1866 commerce quadrupled, and it has again doubled in the last ten years. In fact, it is now nine times what it was forty years ago, which is a greater increase even than in Great Britain. It is only during the present generation that Sweden has become a commercial nation. Trade was considered dishonourable and illegal until the seventeenth century, when the Crown gave charters to twenty-four towns to trade, but only in vessels belonging to themselves. Differential duties on foreign bottom were still levied in 1830, and as the whole mercantile navy of Sweden barely reached 61,000 tons, the exportation of timber and iron was in a measure prohibited.

The increase of shipping has been on a par with that of commerce.

	Vessels.	Tonnage.	Average tons.
1831 .	1178	61,000	52
1868 .	3268	303,000	90
1876 .	4381	525,000	120

Thus the flag of Sweden, which claimed 1200 schooners in 1831, now possesses 4400 fine sea-going vessels. The aggregate tonnage of the mercantile marine has multiplied nine-fold in the interval.

Taking the returns of the ports of Sweden for 1875-76, and comparing them with ten years before, we find the tonnage of entries has grown as follows:—

	1865-66. Average.	1875-76. Average.	Increase.
Swedish .	497,000 tons	951,000 tons	90 per cent
Foreign .	1,133,000 ,,	1,890,000 ,,	68 ,,
	1,630,000 ,,	2,841,000 ,,	75 ,,

In 1866 the proportion of steamers in vessels carrying the Swedish flag was 12 per cent: at present it is 16 per cent.

The number of merchants in Sweden rose from 15,900 in 1861 to 22,200 in 1871.

BANKS.

Sweden was the first country to establish a regular bank of emission, and is still, according to an eminent English economist, the only country in Europe that can present a complete annual balance-sheet. In 1656 Mr. John Palmstruck obtained the right of emission for his bank, now known as the Riks-bank. It was forced to suspend payments in 1745, but resumed in 1776, on paying 14s. in the £ for its notes. It again stopped payment in 1818, and again resumed in 1834, this time compounding for 7s. 6d. in the £, say 37 per cent. Since then it has always paid gold for its notes on demand. In 1852 its metallic reserve was £2,750,000, but in October 1877 it had fallen to £640,000. Its dividends for twelve years have averaged 7 per cent. In 1830 the first of the Enskilda or joint-stock banks of issue was authorised, and in a few years their number multiplied. At present there are twenty-eight banks of issue (independent of the Riks-bank), which have 153 branches all over Sweden, the country people preferring the notes to gold. The notes range from 5 shillings to £30, and the metallic reserve varies from 35 to 50 per cent of the emission. Each bank of issue must have at least thirty-three shareholders, all Swedes; minimum capital £55,000 all paid up, each subscriber being liable for all the bank's obligations. These banks have been so well managed that their profits every year range from 4 to 20 per cent.

There are also fifteen joint-stock banks of limited liability, without right of emission, and 324 savings banks.

The balance-sheet of the Riks-bank, and of the forty-three joint-stock banks, at the close of 1877 showed thus:—

	Riks-bank.	Banks of issue.	Limited banks.	Total.
Capital . .	£1,400,000	£3,200,000	£1,400,000	£6,000,000
Reserve fund .	680,000	680,000	410,000	1,770,000
Assets . .	5,000,000	18,500,000	7,200,000	20,500,000
Emission . .	1,700,000	3,300,000	...	5,000,000
Metallic reserve	600,000	480,000	13,000	1,093,000
Deposits . .	1,080,000	9,500,000	3,100,000	13,680,000
Discounts .	1,600,000	8,400,000	3,100,000	13,100,000

The General Mortgage Bank, founded in 1861, has ten branches with 47,000 members; any land-owner whose property is worth £55 or upwards may become a member. In 1877 the bank had emitted debentures up to £13,500,000, on estates valued at £32,500,000, and these debentures ruled at par in the market. More than £2,000,000 had been redeemed, leaving the actual issue at £11,250,000 sterling. Borrowers pay 6 per cent, which includes redemption in sixty years, as well as ¼ per cent for bank expenses. The actual expenses, however, average only fifteen-pence for every £100, and the surplus is divided as a bonus among the members. The reserve capital consists of £440,000 donation from Government at starting (in public funds, not to bear interest unless in case of emergency), and also £400,000 accumulated profits before the law of 1878 introduced the bonus system: in all £840,000 sterling.

The House Mortgage Bank has been established on principles similar to the above, and will advance debentures on any house insured against fire. Its capital and reserve fund do not exceed £16,000, and its transactions up to December 1877 only reached £314,000.

The progress of savings banks in the last few years shows the increasing prosperity of the people.

	1862.	1874.	Increase.
Number of depositors .	208,000	695,000	242 p. c.
Amount	£1,655,000	£7,480,000	350 ,,
Number of banks . .	167	324	90 ,,
Ratio per inhabitant .	8s.	33s.	310 ,,

One-third of the depositors are children under sixteen years of age.

FINANCES.

Sweden is one of the lightest taxed countries in Europe, and its public debt is trifling.

		Per head.
Revenue . .	£4,100,000	18s. 6d.
Debt . .	10,120,000	46s.

The debt consists of railway loans, mostly raised in England, and the value of the State railways is equal to 95 per cent of the debt. Local taxation amounts to £2,000,000 per annum, or 9s. per head; thus making the total burden only 27s. 6d. per head.

NORWAY.

When ceded to Sweden in 1814, Norway was so insignificant in population, commerce, or wealth, as to give no promise of the prosperity it has since attained. Under the Danish *regime* letters were not encouraged; there was no university, nor even a bookseller's shop in the whole country. There are now public libraries and schools in every parish, and the university of Christiania counts 600 students. So late as 1840 the country was in so primitive a condition that the merchants used to send a vessel weekly from Bergen to Amsterdam to purchase vegetables, and even to forward their clothes to be washed in London. The Government maintained inns along the roads of the interior for the reception of travellers, in the same hospitable manner as the Incas of old in Peru.

Norwegians make excellent sailors, the number of hands in their merchant navy reaching 61,000, an increase of 26 per cent since 1868. Their fisheries form a great source of wealth; during seven weeks the northern seas are crowded with fishing-boats, which take usually 600,000 tons of fish, valued at £700,000 sterling. On this occasion about 1,000,000 codfish are cut in stripes, and dried on the rocks, for exportation. There are also important lobster fisheries on the coast, and all the rivers are full of salmon.

The supply of timber is well-nigh inexhaustible, but the destruction of forests in some instances has caused the glaciers to descend upon places that were before habitable. The exportation of timber amounts to £1,500,000 sterling per annum.

The increase of population since 1801 has been 145 per cent. Whether owing to climatic causes, or the consumption of spirits, the rate of insanity (the same as in Ireland) is the highest known on the face of the earth, namely three per 1000 of the population. Crime is rare, and the inhabitants are very hospitable; they are so conservative that in the rural districts they wear the same costumes as in the time of Harold Haarfager.

AGRICULTURE.

Although 93 per cent of the population are farmers, there is less than 1 per cent of the area of Norway under tillage. Dense forests cover most of the country, except in the vicinity of the mining works. Rivers are numerous, and serve for floating down the timber and metals from the interior. There are 110,000 estates for tillage, two-thirds being occupied by the proprietors, and one-third by tenants. An ordinary estate may be purchased for £1000 sterling, say 300 acres of wood and arable land; the renting value

would be £50 a year; wages about 6d. a day with board. Cottiers often rent small patches of a couple of acres at 1s. per month. They may at any time give six months' notice. that they intend to leave, but if they pay their rent they or their widows can never be disturbed by the landlord, nor can he raise the rent.

The crops are often destroyed by the rains. Vegetation in the northern parts is so vigorous that it is only seven weeks from sowing-time to harvest. In the six months' night of winter the peasants manufacture all the requirements of domestic use, except cutlery and pottery, which they import from England. They also devote a part of the winter to fishing, as the moonlight and aurora borealis enable them to work. They live mostly on fish, black rye-bread, and salt butter, and sometimes have meat on Sundays. They consume prodigious quantities of brandy made from potatoes, which costs only 14d. a gallon.

The increase of agriculture in ten years has been as follows:—

	1865.	1875.	Increase.
Wheat, bushels .	271,000	254,000	...
Oats „ . .	7,881,000	8,846,000	12 per cent
Rye, barley, etc. .	4,995,000	7,144,000	43 „
Potatoes . . .	18,035,000	18,825,000	5 „
	31,182,000	35,069,000	13 per cent

The average yield of wheat is 21 bushels, of barley 32, and of oats 38 bushels per acre.

The latest returns of farm-stock are as follow:—

Horses	152,000
Cows	1,016,000
Sheep	1,687,000
Pigs and goats . . .	325,000

In the far north the inhabitants of Lapland have herds

of reindeer, varying from 100 to 2000 head: when used for draught these animals travel easily 130 miles a day.

Norway exports 60,000 fat cattle yearly. The total agricultural income is £13,000,000, including £3,000,000 for timber.

COMMERCE.

In 1820 trade was so backward that it was impossible to buy a pound of butter at Christiania, the capital, unless at the half-yearly fairs, when people laid in stocks of everything for six months. Merchants were only allowed to deal in specific wares: thus a tea-merchant could not import flour. The export of timber and minerals sufficed to pay for grain, meat, and cheese, imported from abroad.

The arrivals of vessels in Norwegian ports compare as follows:—

	1866.	1876.	Increase.
Norwegian .	1,044,000	1,252,000	20 per cent
Foreign . .	390,000	565,000	45 ,,
	1,434,000	1,817,000	29 per cent

In the last few years Norway has increased her trade 55 per cent:—

	1870-71. Average.	1875-76. Average.	Increase.
Imports . .	£5,710,000	£9,550,000	75 per cent
Exports . .	4,483,000	6,130,000	35 ,,
	£10,193,000	£15,680,000	55 per cent

So sound is the mode of business, that it is said not a single ship-owner has failed in the present century. The exports comprise £1,500,000 sterling of timber, 240,000 tons of dried fish, and minerals valued at £160,000. A new item has lately been added—namely, beer, the export of which is 500,000 gallons, or 100 times what it was ten years ago.

Norway possesses the third great mercantile fleet of the world. Its development has been incredibly rapid.

	Tons.	Increase.
1868 . .	948,000	...
1876 . .	1,436,000	6 per cent per annum

In the last eight years the Norwegians have built 60,000 tons yearly. Their merchant navy shows an average of 24 tons per seaman.

The manufactures and minerals amount to £5,000,000 per annum. Debt and taxation are very light: the former only £4,000,000, of which one-half is represented by State railways. Taxes of all kinds are about 26s. per inhabitant.

DENMARK.

Having been stripped of Norway in 1814, and of Sleswig-Holstein in 1866, this is now one of the smallest states in Europe, the area being barely half that of Ireland. Denmark is, nevertheless, remarkable for the thrift and industry of its inhabitants, the advanced condition of public instruction, and the general prosperity of the people. Manufactures were introduced in the eighteenth century by a nobleman of Jutland, who constructed a foundry and a leather factory, his example being imitated by some merchants, who commenced woollen manufactures. The only handicraft that has been of much benefit to the country is boat-building; but there are sundry sugar-mills, paper-mills, distilleries, and foundries, of more or less importance. Agriculture constitutes the real wealth of Denmark, which was for a period retarded by unwise efforts of the Government to promote manufactures at any cost; "protective" duties were imposed, which succeeded in clothing the Danes in Danish broadcloth. The stuff was abominable and very dear, and the hands taken from agriculture to work in factories were so much loss to the nation.

The Government has made 500 miles of railway, besides 350 miles belonging to companies. Internal traffic is further aided by a canal constructed in the close of the last century (1777-1784), connecting the Baltic with the German Ocean, twenty miles in length, navigable for vessels of ten feet draught.

Denmark is entitled to the applause of mankind for having been the first European nation to abolish slavery, an example quickly followed by Great Britain. Her West Indian possessions of St. Croix, St. Thomas, and St. John, are of little value, since they only produce annually 7000 tons sugar, and 1,000,000 gallons rum.

AGRICULTURE.

So backward was agriculture in the eighteenth century that potatoes and clover were unknown. Each estate comprised from 2000 to 10,000 acres, the Hovedgard or mansion being surrounded by small farms called Bondergods, or Bondsman's lots. Each bondsman held by a verbal lease for his own and his wife's life, the lease consisting in the lord's shaking hands with him. These bondsmen were, however, at times treated with extreme harshness, the local judges being usually the nobleman's footmen or coachmen. The assembly of land-owners at Roskild declared their right to flog women. So deserted were the estates under Frederic IV. that he had to send militia to till the lands. Counts Stolberg and Struensee commenced reforms by emancipating the bondsmen on the Crown lands in 1769, but it was not till the present century that they were "levelled up" to the standard of yeomanry.

In 1801 the whole of Denmark belonged to 15 earls, 16 barons, and 583 landed gentry, except a few estates of the Crown, or of certain corporations. The peasants, previous

to 1788, had been sold like trees on the various estates, an English writer describing them as "dirty, devoid of energy, and not so well fed as Jamaica negroes."

A single generation of freedom wrought wonders in the aspect of the farming class. In 1840 the census showed that one-half of Denmark was owned by peasant farmers, and the exports of agricultural produce had doubled.

The value of the farms in 1840 was estimated at £21,000,000 sterling, one-half of which had been accumulated in a few years by the thrifty farm-labourers. "The first thing (writes a traveller) that one of these peasants buys is a clock, next a horse or cow, which he hires out until he has enough saved to buy a piece of land." Many of the peasants began by renting a cabin and three or four acres, either going halves with the landlord, or giving thirty days' labour during the year. In this manner the crops increased yearly, as well as the cattle. The pastures are equal to those of Lincolnshire, and as no part of Denmark is ten miles from the sea, there is always ready means of exporting fat cattle for the London market.

The peasants and farmers grow rich by reason of the high prices they obtain for their products, while the cost of living is small. A Danish peasant can support a household of five persons with ease on £20 a year.

The actual tenure of the kingdom is as follows:—

Class.	Number.	Area.	Average.
Hovedgards . .	550	1,380,000 acres	2500 acres
Large farms . . .	1,180	360,000 ,,	300 ,,
Bond-farms . .	69,100	4,200,000 ,,	60 ,,
Huusmen . .	137,000	560,000 ,,	4 ,,
Cities and waste .	...	2,700,000 ,,	...
Area of Denmark		9,200,000 ,,	31 ,,

A "Hovedgard," or noble's estate, has usually 400 head

of cattle and 1000 merino sheep. The cows give 200 lbs. butter each per annum, and as two-thirds are milch cows, the product averages 25 tons yearly. All the appliances are on the most approved plan, including steam-churns, threshing-machines, and the like. The same may be said of the large farms, on which, as on the Hovedgards, the cows give nearly double the proportion of butter, and the quality of the same is so much better than on small farms, that it sells higher in the market.

The bondsmen, who hold usually sixty acres in fee, are the most independent, intellectual, and prosperous class of peasant-farmers in the world. Their stock consists of about ten horses, twenty cows, and as many sheep; each farm gives about 1700 lbs. of butter, besides the grain crops, and the bondsman's annual profit averages £90 sterling. This is after paying all expenses, including a land-tax of 3s. per acre and wages; the latter may be put down at £6 a year for indoor servants.

Tenant-bondsmen still exist on some of the Hovedgards; their condition is precisely similar to the class just described, except that they pay 20s. or 25s. per acre rent. The net profit of a tenant bondsman is about 10s. per acre, say £30 per annum, which they put into savings banks until able to buy their land from the lord, at £30 to £35 per acre. This class is, therefore, rapidly declining in numbers:—

1835	. .	29,800 tenant-bonds
1868	. .	10,780 ,,

In the aggregate they hold 650,000 acres, or half the area of Hovedgards, many of the latter having now only 1000 acres as held by the lord, and 1500 acres rented in Bondergods. Bishop Mourad's law in 1861 greatly facilitated the acquisition of land by peasants, without confis-

cating the rights of owners. The value of land is assessed ordinarily as follows :—

	Rent.	Purchase.
1st class . . .	25s.	£35 [1] per acre
2d ,, . . .	18s.	23 ,,

This is about the same as in England, but much below the values in Belgium, France, and Lombardy (*q.v.*)

Huusmen or cottiers hold three or four acres, and their stock consists of a cow and three or four pigs or sheep. As it is impossible to support their families on less than twenty acres, they usually work at certain seasons on the Hovedgards or Bondergods. Sickness or misfortune often reduces them to want, but in such cases they are well attended to by the parochial authorities—the poor-rate averaging for the rural departments £120,000, or nearly 2s. per inhabitant.

The high price of land causes 4000 young men annually to emigrate. They are said to take with them about £100 each, enough to buy a farm in the United States, whereas it would only pay for three acres in Denmark. Farm servants are well fed, and allowed two glasses of brandy daily. Steam-ploughs and steam-threshers are almost unknown, but patent sowers, reapers, threshers, and winnowers are worked by horses.

Since 1850 Denmark has advanced more in husbandry than in a century previous. The breed of sheep has been improved by crossing with the merino; pigs are fattened for exportation to Norway; and the shipments of cattle and dairy produce to England now reach some millions sterling.

The official Tables for the last ten years show—

[1] In some cases land sells as high as £90 per acre.

	1866.	1876.	Increase.
Wheat, acres . .	120,000	140,000	16 per cent
Barley, oats, and rye .	2,260,000	2,435,000	8 ,,
Potatoes . . .	85,000	96,000	13 ,,
Meadow . . .	3,115,000	3,405,000	9 ,,
	5,580,000	6,076,000	9 ,,

The average crops for 1875-76 show—

		Per acre.
Wheat . .	4,230,000 bushels	30 bushels
Other grain .	66,670,000 ,,	27 ,,
Potatoes .	10,890,000 ,,	122 ,,

The Danes consume a great quantity of barley in distilleries. They raise rye in sufficient quantities to export a considerable surplus to Norway, where (as well as in Denmark) most of the bread is made of this grain. The crops of all descriptions are very heavy, finding no parallel except in England. The average yield is, wheat ten-fold, barley eleven, rye and oats eight-fold. The average consumption of grain is 60 million bushels, leaving a surplus of 10 or 12 million for exportation, England taking two-thirds. The value of the grain crop is about £9,000,000 sterling.

If we compare farm-stock with population, we find the Danes have £15 worth for each inhabitant, which is three times the European average, and double that of Great Britain. The latest returns are as follow :—

Horses . . .	352,000
Cows . . .	1,348,000
Sheep . . .	1,720,000
Pigs	504,000

It appears that from 1866 to 1876 there was but slight increase of stock. Cattle had increased 12 per cent, but sheep had declined in equal ratio. The exportation of cattle of all descriptions rose in ten years as follows :—

	Number.	Value.
1866-69 . .	105,000	£630,000 per annum
1875-76 . .	334,000	1,426,000 ,,

showing an increase of 230 per cent in number and 125 per cent in value in ten years. In the same time the export of butter has risen from 4000 to 14,000 tons, being now half the quantity of butter raised in Denmark.

Although the country has 400,000 acres of forest, the supply of timber is deficient, and a good deal is imported.

Mortgages amount to 40 per cent of the value of the total area of the kingdom, which is because of the general desire to buy land.

COMMERCE.

Few countries are better suited for commerce than Denmark. She has a coast-line of 600 miles, and no part of her territory is over 10 miles from the sea. Nevertheless her nobles despised commercial pursuits, and there being no middle class, all trade remained in the hands of foreigners until the seventeenth century. At the same time there were so many restrictions that commerce was only in a manner tolerated. In the present century a wonderful transformation has taken place. Copenhagen often sees 2000 vessels enter her port in a week. This development of trade is partly due to the abolition of the Sound-dues in 1857, previous to which date all vessels passing Elsinore paid a toll of 1 per cent on the value of their cargo, to enable the Danish Government to maintain an efficient system of lights along its dangerous coasts. The toll produced £200,000 per annum, and Denmark received as indemnity a sum of £3,600,000 sterling, of which Great Britain contributed one-third.

The growth of trade is forcibly shown by comparing the

tonnage of vessels entering Danish ports in 1875-76 with the returns of ten years before :—

	1865-66.	1875-76.	Increase.
Foreign bottom	340,000 tons	937,000 tons	180 per cent
Danish bottom	290,000 ,,	972,000 ,,	235 ,,
	630,000	1,909,000 ,,	203 ,,

The balance of trade is against Denmark, the returns for seven years showing a surplus of 25 per cent imports over exports, viz.—

	Gross trade of seven years.
Imports	£78,600,000
Exports	62,500,000
Surplus imports	£16,100,000

Thus the balance against the country is about £2,250,000 per annum. Shipbuilding has been very active in recent years, the number of new vessels launched yearly since 1873 showing an average of 23 steamers and 150 sailing vessels, and the tonnage of the merchant-navy increasing 32 per cent, viz.—

1873	197,260 tons
1876	260,200 ,,

In 1868 steamers formed 6 per cent of the merchant-navy; in 1876 they were as 17 per cent.

BANKS AND FINANCES.

In 1814 the National Bank of Copenhagen was made the Riks-bank of Denmark, with a right of emission up to £2,250,000 sterling, provided the specie reserve always reached 50 per cent of the notes in circulation. This reserve is mostly silver, but in 1865 it fell to 40 per cent of the emission, without, however, impairing the credit or stability of the bank. Since 1860 its sphere is greatly extended, as

it does all the business of the Treasury, besides discounts averaging £2,000,000 sterling. Its emission is now about £4,000,000. The Private bank is a joint-stock one, established in 1857 with a paid-up capital of £666,000; discounts average £1,000,000. The Loan bank has a capital of £220,000. The Landman's bank is the newest established; it advances on mortgage of lands, in debentures bearing 4 per cent interest, these debentures being usually worth from 85 to 90 per cent in the market. The borrower pays annually 5 per cent, which includes the quota for redemption—namely, 1 per cent per annum. None of the Danish banks succumbed to the crises of 1857-1866, or 1873.

There are 314 savings banks, with 316,000 depositors, holding an amount of £10,062,000; and the returns, as compared with 1860, show a prodigious increase of wealth among the people:—

	Deposits.	Ratio to population.
1860 . . .	£3,221,000	25s.
1875 . . .	10,062,000	110s.

This is the highest proportion of any country in Europe, and more than double that of the United Kingdom.

In 1810 the revenue was £1,550,000 sterling, of which Denmark paid one-third, Norway one-third, and the rest was made up of £200,000 from Sound-dues, and £300,000 from West India Islands. Forty years later we find the revenue was the same, although Norway had been transferred to Sweden; the deficit so caused being met by a land-tax of 2 per cent on the value of all farms in Denmark.

At present the revenue is usually £2,500,000, or 10 per cent over the expenditure. The National Debt has been reduced £5,000,000 in twelve years, or one-third, and is now less than £10,000,000 sterling.

RUSSIA.

THIS was a great military power at the beginning of the century, but as much behind the rest of Europe in arts and sciences as if the Ural range formed its western instead of its eastern boundary. When Clarke visited St. Petersburg in 1802, the police provided him with the usual uniform that all foreign guests were compelled to wear as long as they remained in the Czar's dominions: there were also stringent regulations about keeping one's hair cut, the police sometimes visiting the ball-rooms for this purpose. A considerable part of the capital was built of plastered wood. Schools had not yet been established. Most of the carrying trade with foreign nations was done by British vessels; and as the Russian Treasury was unable even to support the Cossack troops, Great Britain (1805) allowed the Czar for them the sum of £12 per head to enable his Majesty to keep on the war against Buonaparte.

Russia would doubtless have progressed more rapidly but for the wars of 1828, 1855, and 1877, which have been a serious drain upon the manhood of the country. Nevertheless, the empire has made comparatively greater advancement than the more favoured (but enfeebled) nations of southern Europe. The best proof of the energy of the Russians is afforded by the rebuilding of Moscow after its destruction in 1812. When Mr. Laveau visited it in 1824 he found 10,000 houses and 12,000 merchants, and the great bazaar comprised 5600 shops. So rapidly did that city rise from its ashes, that in 1839 it contained 1060 factories with 83,000 workmen.

Since the peace of Vienna there have been two distinct

epochs in the onward march of Russia. 1st. The reign of Nicholas, beginning in 1825, remarkable for the creation of numerous canals, and the first system of public instruction. 2d. That of Alexander II., since 1856, in which period we have seen 12,000 miles of railway constructed, and the emancipation of 48,000,000 serfs, as well as an unexampled development of trade.

Population has increased about 55 per cent in forty years:—

1835	56,217,000
1877	86,728,000

This is not wholly the result of natural increase, but partly of conquest. The Emperor Nicholas in 1826 wrested from Persia the provinces of Erivan and Nakshivan, besides compelling that country to pay £3,000,000 sterling for his expenses. Two years later he made war on Turkey, and forced the Sultan, in like manner, to cede territory and pay a war indemnity of £5,000,000. In later years Russia has annexed the rest of Poland, and large portions of Asia Minor and Tartary.

The rate of births exceeds that of any other country in Europe, and, as always occurs with races of rapid reproduction, the span of life is short, the death-rate high, and the proportion of able-bodied males comparatively low.

Annual average of	1831 to 1860.	1876.
Births per 1000 inhabitants . . .	44	41
Deaths ,, ,, . . .	33	29
Increase ,, ,, . . .	11	12
Marriages ,, ,, . . .	19	15

The difference between the number of males and females is less than in other northern countries, and varies from 2 to 3 per cent. Shortly after the Crimean war there were 105 women to 100 men, but in 1870 the surplus of the former was only 2 per cent. As already observed in many

countries, the excess of male over female births is greatest after long wars, and thus the ratio was higher after the Napoleon wars in Russia than since.

1800 to 1830	. .	.	105 male to 100 female births.
1831 to 1860	.	.	103 ,, 100 ,,

The death-rate has fallen so notably, that the average of life is five years longer than it was previous to 1850. In the smiling valleys of the south, amid corn-fields and vineyards, the mortality is 50 per cent higher than in the cheerless regions of the north.

Northern provinces		32 per 1000 per annum	
Siberia	.	34 ,,	,,
South of Nijni	.	53 ,,	,,

The waste of life is greater than in any other part of Europe, owing to the insufficient food of the peasantry. Half the mothers are unable to suckle their infants, having to work in the fields, besides acting as policemen, tax-gatherers, and postmen; for which latter reason the mails are commonly known as the "petticoat post." The death-rate under five years, compared with other countries, shows thus (the figures indicating the number of children per 1000 who complete their first and their fifth birthdays):—

Of 1000 births	First year complete.	Fifth year.
In Great Britain .	854	742
In Russia . . .	708	527
In France . . .	824	707

If Russia could reduce her infant mortality to the level of Great Britain, she would save almost 1,000,000 lives annually.

According to the census of 1872, the classes of the people were as follow:—

	Ratio.	Number.
Nobles and clergy .	3 per cent	2,500,000
Military and citizens .	16 ,,	19,000,000
Peasants . . .	81 ,,	60,500,000
	100 ,,	82,000,000

Among the citizen class the most important are the merchants. First-class merchants must have a capital of 50,000 roubles, and pay an annual licence of £500; they may do banking, shipping, or mercantile business, drive four horses, and carry a sword. Second-class merchants must have 20,000 roubles capital, and pay £200 yearly licence; they may do all manner of business, drive two horses, but carry no sword. Shopkeepers cannot act as bankers or shippers; they are exempt from flogging, and pay a small licence. Among the first-class merchants are the "foreign guests," who numbered forty-six persons in 1835, and only thirty-four in 1857.

COMMERCE.

The customs returns since 1820 show the rapid progress of trade: allowing for the discount on paper roubles at various periods, the returns are, in round numbers, as follows:—

	Imports.	Exports.	Total.
1820-1839 .	£10,500,000	£12,000,000	£22,500,000
1840-1849 .	15,000,000	18,000,000	33,000,000
1850-1859 .	21,000,000	23,000,000	44,000,000
1860-1869 .	33,000,000	32,000,000	65,000,000
1870-1878 .	69,000,000	59,000,000	128,000,000

Down to 1857 the tariff all but prohibited the importation of foreign goods, with the unwise object of fostering native manufactures, instead of devoting all the energies of Russia to raising wool, flax, wheat, and other products that would have proved inexhaustible sources of wealth.

No sooner were the duties relaxed than trade increased prodigiously, both imports and exports growing 50 per cent in ten years. Moreover, the system of railways begun in 1862 was so actively prosecuted that, during sixteen subsequent years, no less than 700 miles a year were opened to traffic. This explains how the trade of the empire has trebled in twenty years. During the half-century between 1819 and 1869 the Custom-house books showed an excess of exports, that is, a balance of trade in favour of Russia to the amount of £90,000,000 sterling: on the other hand, the balances against Russia since 1869 make up an equal amount, averaging £10,000,000 per annum.

No returns later than 1857 are published on the number of merchants and tradesmen in the empire, but by comparing them with 1835, we find the increase of their numbers and capital was as follows:—

	1835.			1857.		
	No.	Capital.	Average capital.	No.	Capital.	Average capital.
1st Class merchants .	810	£7,000,000	£9000	963	£18,000,000	£19,000
2d do. do.	1,730	6,000,000	3500	2,065	18,000,000	9,000
Shopkeepers	32,000	4,500,000	140	49,400	48,000,000	980
Huxters and Pedlars .	13,000	...	...	6,700	...	...

The resources of Russia are not yet half developed, or even understood: so prodigious are they, that, in an interval of ten years of peace, the exports doubled, viz.—

	1865-66. Average.	1875-76. Average.
Grain .	£9,730,000	£27,220,000
Flax, hemp, linseed	7,710,000	12,450,000
Cattle .	490,000	1,870,000
Sundries .	14,920,000	20,560,000
	£32,850,000	£62,100,000

The returns for 1878 show a still larger sum, as the export of grain last year reached 6,000,000 tons, worth £43,000,000 sterling. There is one article of export which shows a great falling off—viz. tallow. In 1803 it was over £3,500,000 sterling; in 1865 it had fallen to 50,000 tons, and at present it averages 9000 tons, worth one-twelfth of the sum it stood for in 1803. It is remarkable that fifty years ago (1827-1832) the export of hemp and flax was double that of bread stuffs; but now the order is reversed. The Khans of Bokhara and Khiva maintain a brisk trade with Russia, averaging £5,000,000 yearly; the exports from Russia to Tartary being 50 per cent over the value of what the empire receives from the Khanates.

As the balance of trade has been £100,000,000 against Russia in the last twelve years, it is not surprising to find there has been an outflow of precious metals. The bullion account shows £19,000,000 exports over imports.

	Imports of bullion.	Exports.
1866 to 1869 . .	£11,000,000	£9,000,000
1870 to 1877 . .	12,000,000	33,000,000
	£23,000,000	£42,000,000

The surplus export of £19,000,000 sterling is less than the proceeds of the gold-fields in Siberia, which average more than £4,000,000 sterling per annum.

The number of vessels entering Russian ports has progressed as follows:—

	Vessels.	Tons.	Proportion of Russian.
1837 . . .	5,620	935,000	5 per cent
1866 . . .	17,200	2,576,000	21 ,,
1876 . . .	31,150	4,570,000	18 ,,

Although the proportion of Russian vessels on the waters of the empire was lower in 1876 than ten years

before it is nevertheless true that the Russian vessels increased 64 per cent.

	1866.	1876.	Increase.
Russian, tons . . .	426,000	680,000	64 per cent
Foreign ,, . . .	2,150,000	3,890,000	81 ,,
	2,576,000	4,570,000	79

The internal navigation of the empire employs 385 steamers and several thousand flat boats and rafts, the system of canals and rivers forming a total of 19,800 miles, and connecting the White, Black, Baltic, and Caspian Seas. The merchandise carried on these canals is valued at £105,000,000 yearly. St. Petersburg stands for half the trade of the empire.

AGRICULTURE.

The area of Russia is nearly 2,000,000 square miles. It may be briefly described as follows:—

	Acres.	Proportion.
Crops and pasture . . .	310,000,000	25 per cent
Forest	500,000,000	40 ,,
Waste	434,000,000	35 ,,
	1,244,000,000	

The lands actually occupied are almost evenly divided between agriculture and pasture, the former producing yearly about 40,000,000 tons grain, and the latter serving to maintain 124,000,000 cattle and sheep. Sixty years ago the Russians contented themselves with raising corn for themselves, the exportation rarely exceeding in value 1,000,000 roubles or £140,000 sterling. As soon, however, as the canals facilitated traffic, grain became an important item of trade, the production being further stimulated by the emancipation of the serfs in 1861-63, since which time the export of grain has multiplied sevenfold.

Previous to 1861 no less than 80 per cent of the population were serfs, who were bought and sold on the estates like cattle, viz.—

	Males.	Females.	Total.
Crown serfs . . .	11,168,000	11,683,000	22,851,000
Held by nobles . .	10,674,000	11,081,000	21,755,000
Appanage serfs . .	1,624,000	1,702,000	3,326,000
	23,466,000	24,466,000	47,932,000

The Crown serfs paid a poll-tax of 6s. for each "soul," that is for each male, in lieu of rent for the land, the average farm of 35 acres being subject to about £1 per annum. When the emancipation took place in 1861 the poll-tax was raised 50 per cent, and the peasants obtained "fixity of tenure," being forbidden to leave the lands, which remain mortgaged to the Government until 1901.

The serfs of the nobles were owned as follows:—

Nobles.	Average of serfs.	Total.
44,000	15 each	660,000
36,000	70 ,,	2,520,000
23,000	800 ,,	18,575,000
103,000	211 ,,	21,755,000

The average holding was about 30 acres for each family. Those subject to rent paid usually 4s. per acre. Those who paid no rent were obliged to give two days' work every week for their masters. "The land is ours, but we are yours," was their motto, and they refused liberty without the lands.

Meantime the nobles pawned both serfs and lands whenever they needed money, and these mortgages in 1859 reached a sum of £60,000,000 sterling,[1] of which one-half was due to the Imperial Bank.

[1] The mortgages comprised 7,107,000 serfs, and 102,000,000 acres of land.

When the emancipation was decreed the nobles were compelled to sell the lands to the serfs at 80 per cent of the official valuation, unless the latter chose to take a "beggar's lot," that is, one-fourth of their previous holding, gratis. In 1870 the result appeared as follows:—

3,614,000	peasants had purchased	34,766,000	acres
1,840,000	,, took "beggars' lots,"	6,440,000	,,
5,454,000	,,	41,206,000	,,

As each family had an average of three males, it resulted that a peasant holding was about thirty acres, that is ten acres for each male. The holders of "beggars' lots" were free to sell their farm, and move to any other part of the empire, but the peasant who had purchased from his master[1] was bound to remain on the land, and pay 2s. an acre for forty-nine years (till 1912), to discharge to the Crown the price of his emancipation. The total assessment for indemnity to the nobles was £65,000,000 sterling, say £3 per head for the number of serfs.[2] The actual sum paid by the State, down to 1870, was only £50,633,000, of which £30,000,000 in mortgages, cancelled by the Imperial Bank, and the balance in Government stock. The returns embrace 40,954 estates, which cost on an average £1200 each, or 29s. per acre. Besides this, the peasants themselves paid 6s. per acre, making the total cost of redemption stand thus:—

Paid by Government . .	£50,633,000
,, the Serfs . .	10,470,000
Total (35s. per acre)	£61,103,000

[1] These peasants are in one respect better off than before. They can now be flogged only by the municipal authorities, and not by their masters.

[2] The domestic serfs, having no land, were liberated in 1861, sub-

This does not include the redemption in Poland, which was carried out differently, at a cost of only 17s. per acre, nor the Baltic provinces of Finland, Courland, and Livonia, where the nobles had already enfranchised the peasants after a manner of their own.

There are at present 11½ million land-owners, with an average of 110 acres each.

	Class.	Arable. Acres.	Forest and waste. Acres.	Total: Acres.	Average holding. Acres.
	Crown .	76,000,000	284,000,000	360,000,000	...
103,000	Nobles .	60,000,000	132,000,000	192,000,000	1900
142,000	Cossacks	10,000,000	8,000,000	18,000,000	130
3,614,000	ex-serfs .	35,000,000	25,000,000	60,000,000	17
3,975,000	Crown peasants	84,000,000	96,000,000	180,000,000	45
37,000	civilians, merchants, etc. . .	6,000,000	32,000,000	38,000,000	1000
	Colonies, mines, etc.	2,000,000	315,000,000	317,000,000	...
1,840,000	"Beggars"	7,000,000	...	7,000,000	4
1,625,000	Appanage	30,000,000	42,000,000	72,000,000	45
11,336,000		310,000,000	934,000,000	1,244,000,000	110

Although land has generally doubled in value,[1] the ultimate benefits of emancipation will not appear till the close of the century. At present the ex-serfs seem hopelessly plunged in debt. In 1875 they owed the Crown £85,135,000, including for arrears £1,890,000, and it is probable that before long the Crown will have to admit the 10 million land-holders to a general bankruptcy, and allow them all to start fresh for themselves. Many of the

ject only to a payment of £10 within two years to their masters, or of £8 in case of female serfs.

1 Report of Sir A. Buchanan, H.B.M. Ambassador.

peasants are poorer than before, their stock of cattle showing a fall of 50 per cent in the last ten years.

Some have taken farms on the "Metayer" system from the nobles, as the latter have introduced great improvements and machinery to supply the loss of serf-labour. The average crops on the lands show as follows:—

	Nobles' lands.	Peasants' lands.
Wheat . .	14-fold	4-fold.
Rye . . .	16 ,,	8 ,,

The nobles put fourteen tons of manure, the peasants only seven tons per acre. Each peasant, as á rule, cultivates twelve acres, but his food is so bad, his implements are so rude, that it is said two men working sixteen hours will get through less labour than an English farm-servant in ten hours. "No man but a Russian could subsist on such poor fare," is the opinion of an eminent writer.

The Moujiks' food consists of rye-bread and mushroom soup, which represents a value of twopence a day. He lives in a hut five feet square, which is periodically burnt down, from the custom of using woodlaths for candles.[1] His wife helps him at the plough, sometimes only three days after her confinement. The poor women have such a wretched life, that 5 per cent die in childbed, or double the European average.

The condition of the nobles has been wonderfully improved by the emancipation. They were enabled to pay off their debts to the Imperial Bank, and by better agriculture obtain much more from the land. The importation of agricultural machinery from abroad has increased sixfold in ten years, which shows the improvement in this direction.

[1] From 1860 to 1864 no fewer than 53,200 houses were burnt, say 10,600 yearly.

1865-66	Imported ploughs .	£61,000 per annum
1875-76	,, ,, .	354,000 ,,

Southern Russia is admirably suited for agriculture, both as regards climate and soil, the rainfall being only 12 inches, against 20 in the other provinces. In the last century it was heavier, but it has declined since the forests have been reduced. The country west of the Volga is termed the granary of the empire. The peasants scratch the ground with wooden ploughs, and the yield averages four-fold. There is a deplorable waste of labour, since the men and acres employed in Russia for raising grain ought to suffice to feed all Europe. Each peasant cultivates about 12 acres, and raises 120 bushels, whereas each rural male adult in England is found to cultivate 18 acres, and produce 540 bushels, or four times as much as in Russia. The consumption and export of grain during the last five years averaged as follows :—

	Consumption.	Export.	Total.
Rye and oats	1220 million bush.	80 million bush.	1300 million bush.
Wheat . .	110 ,, ,,	80 ,, ,,	190 ,, ,,
	1330 ,, ,,	160 ,, ,,	1490 ,, ,,

So great has been the impulse given to agriculture by the emancipation of serfs and the construction of railways, that the grain exports have increased seven-fold in twelve years.

	Grain.	Value.
1838-39 . . .	573,000 tons	£8,400,000
1866-67 . . .	910,000 ,,	9,600,000
1878 . . .	6,150,000 ,,	43,460,000

The consumption is about 17 bushels per inhabitant, chiefly rye ; including a bushel a head used in distilling corn-brandy. The acreage and crops averaged in the years 1870-1872 as follows :—

	Acres.	Crop.	Per acre.
Wheat . .	29,000,000	188,000,000 bushels	6½ bushels
Rye, oats, etc.	126,000,000	1,306,000,000 ,,	10½ ,,
Potatoes . .	3,000,000	345,000,000 ,,	115 ,,
Flax and hemp	3,000,000	340,000 tons	250 lbs.
	161,000,000		

The banks of the Don constitute the largest flax-field in the world, and Russia exports annually 220,000 tons of flax and hemp. These products attain the sum of £16,000,000 sterling in value, viz.—

	Fibre.	Seed.	Value.
Flax .	250,000 tons	300,000 tons	£12,000,000
Hemp .	100,000 ,,	500,000 ,,	4,000,000

Beet-root forms another staple industry. The crop has trebled since 1850, and is now 1,500,000 tons,[1] yielding over 120,000 tons sugar, of which one-third is exported. The introduction of potatoes by a Mennonite colony from Prussia in 1769 was attended with fearful riots, the Russians saying they were "devil's apples." Tobacco yields an average crop of 52,000 tons, or nine-tenths of the quantity consumed in the empire. The production of cotton reaches 6,000,000 lbs., or one-thirtieth of the amount requisite for the Russian mills. Silkworms were introduced by Emperor Nicholas in 1840, the same year that His Majesty founded the agricultural model-farms, and at present 1,000,000 lbs. of raw silk are produced yearly.

Wine was first cultivated with success in 1824, by a Frenchman who settled on the banks of the Don. The vintage now averages 2,000,000 gallons per annum.

Pasture. — The meadow and grazing lands comprise 145,000,000 acres, which supported the following farm-stock:—

[1] It averages a little over 3 tons per acre.

	1848.	1878.	Increase.[1]
Cows . . .	20,000,000	28,000,000	40 per cent
Horses . .	16,000,000	20,000,000	25 ,,
Sheep . .	36,000,000	64,000,000	77 ,,
Goats and pigs .	9,000,000	12,000,000	33 ,,
	81,000,000	124,000,000	50 ,,

Much attention has been devoted in recent years to the improving of breeds. Russia is now one of the great horse-farms of Europe, the exportation averaging 3000 animals monthly, some of them, especially from Count Orloff's stud, obtaining as much as £1500 a head. Merino sheep number 12 millions, or one-fifth of the total.[2] The Tartars have large flocks of sheep, sometimes 40,000 or 50,000 head, and even the poorest 1000. Taking the minimum yield of sheep at 3 lbs. per fleece, the annual clip of Russia cannot be less than 200 million lbs., three-quarters of it being used for home manufacture. The wandering Tartars of the steppes have numbers of camels, sometimes as many as 1000 for one family.[3] In the north of Russia the peasants cultivate bees on an extensive scale, producing 40 million lbs. honey and wax.

Forests.—The value of timber felled averages £25,000,000 per annum, or barely 1s. per acre, which is much less than in other countries (see page 26). It is stated that the forests contain about 170,000 wolves, and the number of travellers and children eaten by them averages 200 yearly.

Summary.—The total rural products of Russia are valued as follows :—

[1] The increase in the last thirty years has been less than ten years' increase would be in Texas, River Plate, or Australia.

[2] In Taurida there is a farmer, Mr. Falz Fein, who has 300,000 merinoes.

[3] A camel will easily carry a burthen of 300 lbs., and travel twelve or fourteen days without water.

Grain	£215,000,000
Flax and hemp . . .	16,000,000
Timber	25,000,000
Sundries	14,000,000
Cattle-farming . . .	100,000,000
	£370,000,000

MANUFACTURES AND MINERALS.

From the beginning of the century until 1815 the industry of Russia was seriously checked by the Napoleon wars, but not altogether paralysed. In 1808 there were 640 factories, chiefly at Moscow, Kazan, and Tula, for the manufacture of cottons, linens, woollens, leather, canvas, and cutlery, without counting the ironworks of Perm and Olonetz, or the mines of Siberia. The Ural mountains were said to be "the Potosi of Europe," yielding in minerals £6,000,000 per annum, of which one-third consisted of gold and silver. The iron of Dougua was esteemed equal to the best Swedish, however little developed owing to the difficulty of transport, sometimes taking three years to reach St. Petersburg.

A second epoch may be said to date from the opening of three main canals between the Caspian, the Baltic, and the White Sea, almost coincident with the accession (1825) of the Emperor Nicholas. Shubert, in his report of 1828, sums up the total manufacture of Russia thus:—96 million yards of cotton, woollen, and linen fabrics, 16,000 tons of sugar, 7000 tons soap, 15 million glass bottles, and £800,000 worth of silk manufactures. He took no account of hardware, although thousands of operatives were employed in the iron industries of Perm, Viatka, and Nijni, which counted 900 furnaces, while Tula and Olonetz produced large quantities of cutlery, arms, and artillery. Tula was

already known as the Sheffield of Russia, its 600 workshops and 7000 artificers being specially famous for cutlery and snuff-boxes. At that time (1827–1832) iron was so dear that the horses were unshod, and even the farming implements were entirely made of wood.

So rapidly did industry progress after the peace with Turkey (1828), that we find in 1840 there were 6850 factories, employing 413,000 operatives, besides 280,000 men engaged in the mines and ironworks. A separate report on the cotton factories (1842), shows 620 factories, of which 63 moved by steam, the whole employing 47,000 looms and 96,000 operatives, whose yearly product was over £5,500,000 sterling. The iron and copper works at Perm counted 7400 furnaces, and the annual production in all Russia was 4000 tons copper and 170,000 tons iron.

Mining industry was still far from being adequately understood; the coal-beds of Taganrog were said to be not worth working, and salt was imported from England because the carriage from Orenburg was so expensive. The first time Russian coal came into use was in 1847, the yield being only 50,000 tons. Tegebolzki the same year estimated the manufactures of the empire at £72,000,000 sterling, but this seems to have been above the reality, as we find that in 1856 the amount was only £35,000,000, not including the minerals and metals. The production of iron between 1840 and 1850 averaged 150,000 tons per annum.

After the Crimean war the Czar set himself seriously to make railways all over European Russia, and such impulse was thus given to native industry that in 1866 there were 85,000 factories, with 919,000 operatives, the total value of manufactures being returned as £110,000,000, since increased to £166,000,000 sterling, as shown thus:—

	Factories.	Operatives.	Product. 1866. Millions sterling.	1876. Millions sterling.	Increase.
Cotton mills . .	3,306	147,000	25	23	...
Woollen mills . .	1,831	105,000	11	18	65 per cent
Distilleries . .	13,460	84,000	19	30	55 ,,
Foundries . .	1,732	137,000	12	17	40 ,,
Sugar mills . .	408	102,000	8	8	...
Flour mills . .	20,834	78,000	4	16	300 ,,
Tallow factories .	2,961	19,000	6	6	...
Tanneries . .	5,368	25,000	4	8	100 ,,
Linen, silk, glass, etc.	35,044	222,000	21	30	43 ,,
	84,944	919,000	110	166	51 ,,

The production of coal has in late years risen to 7,000,000 tons, or two-thirds of the required quantity for consumption, the importation being close on 3,000,000 tons yearly. Gold-digging usually employs 20,000 miners in Siberia; the annual yield varies from £3,000,000 to £6,000,000 sterling. The iron-fields have yet to be fully opened up, the supply being so far short of the demand that the importation of iron and steel has grown six-fold in ten years, and now averages 300,000 tons per annum. The salt-works produce yearly about 1,000,000 tons, besides which 250,000 tons are imported. The progress of internal industry may be measured by the returns of the great annual fair at Nijni-Novgorod, viz.—

	Goods offered.	Goods sold.
1841 . .	£8,000,000	£7,000,000
1857 . .	13,000,000	12,000,000
1876 . .	30,000,000	28,000,000

The merchandise disposed of between the 100,000 traders at this fair in 1876 consisted of :—

Cottons, linens, silks . .	£8,000,000
Ural metals . . .	7,000,000
Flax, furs, leather, etc. . .	7,000,000
Carry forward . .	£22,000,000

Brought forward .	£22,000,000
Flour, fish, brandy, etc.	3,000,000
Tea and luxuries . . .	3,000,000
	£28,000,000

The above development of industry is confirmed by the returns of the foreign commerce, all tending alike to prove that the industry of Russia has quadrupled in the last forty years.

Poland is one of the most industrial provinces of the empire, having at present 3290 cotton, woollen, and linen factories.

RAILWAYS AND CANALS.

The first railway was opened in 1838, from St. Petersburg to Czarsko-Selo; the second was the Moscow line in 1851. It was not, however, until 1862 that the present network of railways was begun, and in latter times about 700 miles yearly have been opened to traffic :—

	1871.	1879.
Miles open	7,200	13,500
Cost of construction .	£150,000,000	£250,000,000

The lines belong to fifty companies, forty of which hold Government guarantees up to a total of £7,500,000 yearly.

In fifteen years ending with 1874, the Government had paid, on account of these railway guarantees, the sum of £15,200,000, or about £1,000,000 per annum. The railway companies were at the same time (1875) indebted over £50,000,000 to the Government, including the liability of refunding the £15,000,000 paid for guarantee. Almost half the shares of the existing railways are held by Government, to an amount of £101,000,000 sterling. The traffic returns are as follows :—

Number of passengers yearly . .	29,000,000
Merchandise	26,000,000 tons
Gross receipts	£23,550,000
Expenses	15,650,000

Canals had been attempted with partial success before the present century. The Empress Marie set a notable example in 1808 by undertaking at her own expense to make the canal which now bears her name, and which carries over 9000 vessels yearly. The Vishney canal (opened in 1825) completed the direct navigation by way of the Volga between the Caspian Sea and St. Petersburg —1434 miles; the traffic on the Volga and Vishney exceeding 13,000 vessels, mostly laden with timber and metals for the Baltic, to a value of £20,000,000 yearly. Before the opening of the Suez Canal it was said the Vishney carried more tonnage annually than any other canal out of China. The Volga throws off another canal to Archangel in the north, by which goods are conveyed in three weeks from Astrakhan to the White Sea. The Tikwina canal, for empty boats returning from the Baltic to the Volga, was opened in 1822. The Kubinsko, for timber, completed in 1828, carries 300 vessels yearly. There are four steamboat companies that navigate the Volga with first-class river steamers, this noble river running a course of 2000 miles without a rapid, whirlpool, or sandbank. It shortens the route for Siberian metals to St. Petersburg by 900 miles; and such is the traffic with many of the principal towns on its banks that Nijni Novgorod employs 70,000 Bourlaki or raftsmen to carry merchandise to or from St. Petersburg, Moscow, and the Caspian. The internal traffic on all the Russian canals is estimated thus:—

St. Petersburg	£25,000,000
Moscow	4,000,000
Riga	4,000,000
Nijni, Archangel, etc. etc. . . .	72,000,000
	£105,000,000

The total inland navigation is as follows:—

Canals	865 miles
Navigable rivers . . .	18,935 „
	19,800 „

INSTRUCTION.

In 1802 the Czar founded the universities of Moscow and St. Petersburg, and twenty years later 600 public schools were established all over the empire. Nevertheless there was little progress made before the emancipation of the serfs: in 1860 only 2 per cent of the military conscripts could write, but in 1870 the proportion had risen to 11 per cent. There are now 1,500,000 children at school, and the empire counts 220 circulating libraries and 360 printing-offices. The following returns show the state of the Press (besides which the booksellers import 2,000,000 volumes yearly):—

	Books printed.	Newspapers.	Total.
St. Petersburg .	714	123	837
Moscow . .	525	31	556
Provinces . .	853	164	1017
	2092	318	2410

In St. Petersburg the daily papers have an issue of 125,000 copies, or less than a single journal of London, Paris, or New York. The papers of the whole empire consist of 264 Russian, 29 German, 6 French, and 19 in various provincial tongues.

BANKS.

The Imperial Bank, founded in 1859, has the sole right of emission, and its notes, as before mentioned, are worth twelve shillings in the pound. Its capital is £2,625,000, and it holds among other securities about £66,000,000 in

Russian consols, besides a mortgage on the Crown lands for £15,000,000, for advances to pay the nobles for the serfs. Its deposits fluctuate between £30,000,000 and £40,000,000 sterling.

There are 376 joint-stock banks in the empire, few of them more than ten years old, the aggregate of their books showing—

Capital paid up . .	£42,000,000
Deposits . . .	64,000,000
Discounts . . .	82,000,000
Dividends . . .	8½ to 13½ per cent.

Those of the number which are over ten years old show a very profitable result, namely, a collective profit of 114 per cent paid in dividends from 1866 to 1875, say 11½ per cent per annum. Two of the above are the land-banks of St. Petersburg and Kherson, founded in 1866 to lend money in rural mortgages: in 1870 they had advanced £1,580,000 on 729 estates.

There are 120 savings banks, the deposits amounting to £3,160,000, say ninepence per head of the population. These banks flourish chiefly in Finland, which province stands for one-third of the numbers of the whole empire, both as regards depositors and amount.

WEALTH AND FINANCES.

Although the gross wealth of the empire holds the fourth place among European nations, coming next after Germany, the ratio for population is the very lowest; the income, however, showing a larger return on capital than any other country of Europe.

	Capital.	Income.	Ratio.
Agricultural . .	£1,690,000,000	£370,000,000	22 p. c.
General and commercial	1,334,000,000	190,000,000	16 ,,
	£3,024,000,000	£560,000,000	19 ,,

This shows an average of £37 capital and £7 income for each inhabitant, which is so low that there seems no accumulation of wealth. The Russian debt, unlike the French or English, is held abroad; the serfs also owe the State £85,000,000 for their lands, and the evils of impecuniosity are enhanced by the flood of inconvertible paper money.

Previous to 1810 the revenue averaged £9,500,000: there was no national debt, the annual subsidy from Great Britain enabling the Czar "to make both ends meet." The invasion by Buonaparte caused for some years an outlay of £30,000,000 per annum, the revenue rarely exceeding half that amount; the difference was covered by loans from the Dutch, and various emissions of paper money. In 1820 Russia owed £35,000,000 to the Dutch merchants, paying them 7½ per cent interest and 6 per cent sinking fund. Meantime the revenue by no means increased in ratio with the population, nor was the public debt of any magnitude until the Crimean War and the construction of railways necessarily involved enormous outlay.

The growth of expenditure and debt is shown as follows:—

	Ann. expenditure.	Per inhab.	National Debt.	Per inhab.
1810 . .	£9,500,000	5s.	...	...
1850 . .	18,000,000	6s.	£50,000,000	15s.
1880 . .	74,000,000	18s.	682,000,000	160s.

More than half of the National Debt arises from wars of conquest,[1] but it appears that the greater number of the territories annexed within the last hundred years are a weakness to the empire, entailing heavy loss upon the national exchequer, since the expenditure far exceeds the revenue.

[1] The recent war with Turkey is stated officially to have cost £130,000,000.

	Receipts.	Expenditure.	Loss.
Poland . .	£2,384,000	£3,393,000	£1,009,000
Caucasus . .	599,000	3,388,000	2,789,000
Finland . .	24,000	302,000	278,000
Other annexations	4,585,000	6,886,000	2,301,000
	£7,592,000	£13,969,000	£6,377,000

Thus, if Russia were stripped of the above provinces, her revenue would be £6,500,000 more than at present. The cost of collecting the taxes is, moreover, very great, say £12,000,000, or 16 per cent of the total. The incidence of taxation and burden of debt, compared with income, have grown so much heavier in recent times that the vitality of the empire is sapped, and there can be little hope for improvement until the masses are educated, the paper-money redeemed, and agriculture raised to a proper level.

AUSTRIA AND HUNGARY.

THERE is a marvellous difference between the Austrian monarchy of to-day and that of forty or fifty years ago, when the nation was said to be composed of peers, peasants, and pedlars. The nobility, in those days, were exempt from taxes, and numbered 472,000 persons, in two classes. First, the rich magnates who lived at Vienna in great magnificence; second, those who had been ruined by lavish expenditure or plundered by their bailiffs, and who now tilled a few acres with their own hands. Most of them, especially in Hungary; spoke Latin as freely as their own tongue, but the bulk of the people were plunged in ignorance,[1] only 5 per cent being able to read. Cattle-lifting was a permanent occupation of one-half the inhabitants of Galitzia, known as Gorales or highlanders, who made periodical raids upon the Mazurakes or lowlanders. The richest lands in Hungary and Bohemia presented for miles the appearance of a desert. The population of Austria and Hungary was almost stationary previous to the emancipation of serfs and introduction of railways.

	Austria.	Hungary.	Total.
1819 . .	16,231,000	10,976,000	27,207,000
1857 . .	18,224,500	13,768,500	31,993,000
1869 . .	20,210,000	15,425,000	35,635,000

The increase for thirty-eight years ending 1857 was less than ½ per cent per annum, whereas in the thirteen years ending with 1870 it was double that ratio. The population is made up of 15,000,000 Slavs, 8,000,000

[1] The superintendent of a large mining establishment asked an English traveller (1828) if Mexico was not one of the British Islands, and if coffee grew well in England.

Germans, 6,000,000 Magyars, and 6,000,000 of Wallacks and other races. On comparing the returns for 1869 with those of 1857 we find that the population in some provinces increases much faster than in others :—

	1857.	1869.	Annual increase.
Bohemia . . .	4,705,000	5,106,000	7 per 1000
Galitzia . . .	4,597,000	5,418,000	15 „
Austria . . .	2,389,000	2,686,000	10 „
Styria . . .	1,057,000	1,131,000	6 „
Moravia . . .	1,867,000	1,998,000	6 „
Tyrol . . .	851,000	879,000	3 „
Other provinces .	2,758,500	2,992,000	7 „
Empire of Austria	18,224,500	20,210,000	9 per 1000
Hungary proper .	9,901,000	11,118,000	10 per 1000
Croatia, etc. . .	3,867,500	4,307,000	9½ „
Kingdom of Hungary	13,768,500	15,425,000	10 per 1000
Total Empire .	31,993,000	35,635,000	9½ per 1000

The increase of Galitzia is hardly altogether from births over deaths ; it probably arises in part from influx of Poles during the insurrections against Russia in 1864 and 1868. Hungary was visited by epidemics in 1872-1874, during which period the deaths were 81,000 over the births. At present the returns for the whole empire average thus :—

	Births.	Deaths.	Increase.
Austria . .	41 per 1000	32 per 1000	9 per 1000 inhab.
Hungary . .	43 „	36 „	7 „ „
Empire . .	42 „	34 „	8 „ „

The mortality of infants is very high, more than one-third dying under 5 years of age. Although the marriage rate is the highest in Europe, the proportion of illegitimate births is 14 per cent, or double the European average.

The principal cities have grown more rapidly in population than the rural parts :—

	1815.	1875.	Increase.
Vienna . . .	238,000	1,021,000	5½ per cent per annum
Buda-Pesth . .	76,000	296,000	4½ ,, ,,
Prague . . .	78,000	190,000	2½ ,, ,,

In every branch of industry, especially manufactures, mining, and commerce, there has been a notable advancement during the reign of the present Emperor, and in reviewing the progress made by Austria and Hungary a recent English writer says :—" Austrian legislators are no longer a heavy drag on enterprise, as they were a few years ago. On the contrary, their spirit of reform sets an example to other nations."

AGRICULTURE.

After the treaty of Vienna the Austrian Empire enjoyed for a period of thirty-three years the utmost tranquillity, unambitious of improvement, and as feudal in agricultural matters as if mankind had turned back the pages of history for five centuries. Bohemia, Moravia, Galitzia, and Hungary, were owned by nobles who held such vast estates that some of them had over 10,000 serfs.[1] These serfs were obliged to the following service for their masters :—

1st. To give 104 days manual labour, or 52 days with their horses or oxen every year. 2d. To pay annual tribute of fowl, eggs, and butter. 3d. Each man to cut a load of wood, each woman to spin six lbs. wool, for the lord of the soil. 4th. One-ninth of all crops or increase of cattle to go to the landlord.

The serfs lived in huts, without the means or the desire of bettering their condition ; while the land-owners kept up

[1] In 1819 there were 1,427,000 male serfs, representing with their families a population of 7,000,000 souls, or one-fourth of the total.

a style of the most princely magnificence and hospitality.[1] The latter derived their chief income from flocks and herds, but were overwhelmed with debts. Wheat was threshed by driving cattle over it, and the surplus grain stored in holes in the ground, for it was impossible to export any, since there were no roads. Pastoral industry was preferred to tillage. Wood-cutting also occupied a large number of people, some of the nobles having 30,000 or 40,000 acres of timber on their estates. Bears and wolves were so abundant, that in one year the Galitzian peasants received rewards for having slain 10 bears and 2000 wolves. In 1849 the Government abolished the feudal system, and released the serfs from all obligations for the lands held by them. Compensation was given to the proprietors in 5 per cent funds, of which the interest is levied one-half on the peasants, the other half on the proprietors themselves. So complete a transformation ensued, in the condition of the country, that the proprietors found their incomes doubled in less than twenty years. The value of land all over the empire rose 100 per cent, and the peasantry became industrious and thrifty.

The improvement was not due solely to the new system of peasant-proprietors, but still more to the introduction of machinery on the estates of the nobles, and the construction of railways.

In 1870 the tenure of the lands was as follows:—

Provinces.	Area.	Number of estates.	Average of holding.
Upper and Lower Austria	8,000,000 acres	189,500	42 acres
Bohemia	13,000,000 „	199,400	65 „
Galitzia	20,000,000 „	496,100	40 „
Carry forward	41,000,000 „	885,000	

[1] In 1832 the Bohemian magnates residing at Vienna held lands to the value of £45,000,000 sterling, but seldom visited their estates.

Provinces.	Area.	Number of estates.	Average of holding.
Brought forward	41,000,000 acres	885,000	
Styria	5,500,000 „	134,500	40 acres
Moravia	5,500,000 „	97,800	56 „
Tyrol	7,000,000 „	112,700	63 „
Seven other Provinces	15,000,000 „	277,308	54 „
Austria	74,000,000 „	1,507,308	50 „
Hungary	79,500,000 „	1,925,000	40 „
	153,500,000 „	3,432,000	45 „

Although feudalism was abolished, the nobles were left in possession of vast properties. There are 900 magnates in Bohemia and Moravia who hold more than 6,000,000 acres, in estates ranging from 6000 to 60,000 acres, one-half timber. In like manner Galitzia has 1500 nobles who own 12 million acres. The other provinces belong for the most part to peasant-farmers, and the tenure of the whole Austro-Hungarian monarchy may be summed up thus: —

	Owners.	Area.	Average.
Nobles	11,800	62,000,000 acres	5200 acres
Peasants	3,431,000	72,000,000 „	21 „

The large estates are chiefly devoted to pastoral, the peasant-holdings to agricultural, industry. Wheat gives ten-fold, maize thirty-fold. Formerly one-third of the arable land was fallow, now only one-fourth. The returns for 1875-76 show:—

	Austria.	Hungary.	Total.
Under grain	16,000,000 acres	16,000,000 acres	32,000,000 acres
„ potatoes, vines, etc.	3,500,000 „	2,000,000 „	5,500,000 „
„ fallow	8,000,000 „	6,000,000 „	14,000,000 „
„ pasture and waste	21,500,000 „	28,000,000 „	49,500,000 „
„ forest	25,000,000 „	27,000,000 „	52,000,000 „
	74,000,000	79,000,000	153,000,000 „

The number of able-bodied men engaged in agriculture

is 7,540,000. Allowing half a million for pastoral pursuits, in looking after 45 million head of farming stock, there remain 7 million for the cultivation of 52 million acres under plough, say 7½ acres per man,[1] against twelve acres in France, and eighteen in England.

The average crops for the last three years have been—

Wheat . . .	90,000,000 bushels	14 bushels per acre.
Barley, rye, etc. . .	390,000,000 ,,	16 ,, ,,
Potatoes . . .	310,000,000 ,,	108 ,, ,,
Beet-root . . .	3,000,000 tons	7 tons ,,
Wines	290,000,000 gallons	200 gallons ,,

There is no increase of the area under grain in the last thirty years, but a remarkable increase of potatoes, beet-root, and rotation-pastures. Moreover, the grain crops have given a greater weight per acre since the introduction of machinery.

	Acres.	Bushels.	Per acre.
1840 . . .	32,000,000	385,000,000	12 bushels
1874-1876 . .	32,000,000	480,000,000	15 ,,

At present the yield per acre is almost on a level with France, or half the average of England.

The imports and exports of cereals for the last twelve years gave the following average :—

	Tons.	Value.
Imported . . .	260,000	£1,540,000 per annum
Exported . . .	850,000	5,320,000 ,,
Surplus exports .	590,000	£3,780,000 ,,

Nothing has fluctuated more than the yield of wine.

[1] Although the product of each man's labour is so small, the peasant-farmers may compare in prosperity with those of any other country. They pay no rent, their taxes are light, and wages seldom exceed £4 a year.

	Austria.	Hungary.	Total.
1825	65 million gallons	90 million gallons	155 million gallons
1840	260 ,, ,,	300 ,, ,,	560 ,, ,,
1874-76	90 ,, ,,	70 ,, ,,	160 ,, ,,
1877-78	100 ,, ,,	275 ,, ,,	375 ,, ,,

The tobacco crop averages 100,000 tons, mostly grown in Hungary. The Tyrolese peasants cultivate silkworms, the yield being nearly half a million lbs. silk. Bees form an important industry in various provinces, the total number of hives being 15 millions.

The following Table shows the proportion of land under tillage, and the ratio of proprietors in the general population, of each province in Austria proper.

	Cultivated land.	Ratio of proprietors.
Austria . . .	40 per cent	7 per cent of population
Bohemia . . .	43 ,,	4 ,, ,,
Galitzia . . .	42 ,,	9 ,, ,,
Styria . . .	22 ,,	12 ,, ,,
Moravia . . .	50 ,,	5 ,, ,,
Tyrol . . .	13 ,,	12 ,, ,,
Seven other provinces	30 ,,	10 ,, ,,
.	29 ,,	8 ,, ,,

The smallest proportion of cultivated land is where the proprietors are most numerous, these being the mountainous districts, such as Styria and Tyrol.

In the last thirty years the wealthy land-owners have devoted much care to refining the breeds of cattle. The returns for 1850 and 1870 show a remarkable increase in the interval.

	Austria.	Hungary.	Total in 1870.	Total in 1850.	Increase.
Horses .	1,385,000	2,159,000	3,544,000	3,238,000	9 p. c.
Cows .	7,422,000	5,206,000	12,628,000	10,460,000	21 ,,
Sheep .	5,026,000	15,077,000	20,103,000	17,080,000	18 ,,
Pigs .	2,552,000	4,443,000	6,995,000	7,410,000	...
Goats .	979,000	573,000	1,552,000	2,260,000	...
	17,364,000	27,458,000	44,822,000	40,448,000	11 ,,

The flocks in Hungary do not multiply as in Australia or South America. From 1810 to 1850 the increase was only 25 per cent; but in later years the returns are more encouraging, for there is an increase of 50 per cent since 1850. In the provinces of Austria proper, sheep-farming has declined very notably since the emancipation of the serfs, many of the nobles having begun to prefer tillage. In 1840 the Austro-Hungarian monarchy counted 30 million sheep, or 50 per cent more than at present, but the civil wars of 1848-49 reduced the number by one-half. The Styrian peasants have sheep-farms to an elevation of 9000 feet over sea-level.

The official returns above quoted do not comprehend the newly-annexed territory of Bosnia-Herzegovina, whose inhabitants possess 1,315,000 sheep, 505,000 cows, and 213,000 horses, while their grain-crops average 7,000,000 bushels. Large game is plentiful in the Bosnian forests, the peasants killing annually 150 bears, 200 lynxes, 1200 wolves, 8000 foxes, and 3000 tiger-cats.

Austria exports cattle to France and England to a value of £2,000,000 yearly. The total rural products of the empire are as follow:—

	Value.
Grain and potatoes	£110,000,000
Wine, oil, beet-root, etc. . . .	31,000,000
Timber	7,000,000
Cattle-farming	115,000,000
	£263,000,000

MANUFACTURES.

Dr. Becker's report in 1834 showed that the total number of operatives in Austria and Hungary was 595,000. The estimates published in 1870 gave double that number, viz.—

	Operatives.	Value of manufactures.
Textile fabrics . .	510,000	£39,400,000
Leather . . .	80,000	10,200,000
Sugar and tobacco .	80,000	12,100,000
Beer	44,000	10,690,000
Cutlery and glass .	60,000	8,340,000
Minerals . . .	92,000	7,100,000
Flour-mills, etc. . .	244,000	32,220,000
	1,100,000	£120,050,000

There has been but trifling increase since 1870, the latest returns putting the total manufactures at £130,000,000. Cotton manufactures have risen to great importance, as shown by the imports of raw cotton and cotton yarn, compared with thirty or fifty years ago:—

1830 . . .	11,000,000 lbs.
1850 . . .	57,000,000 „
1876 . . .	156,000,000 „

There are 120 large factories, mostly in Austria and Bohemia, counting nearly 2,000,000 spindles, and producing goods to a value of £13,000,000 per annum.

Woollen factories, 230 in number, consume 70 million lbs. wool, most of which is native. The excess of imported over exported wool and woollen yarn averages 12 million lbs., viz.—

Imports . .	36,000,000 lbs.
Exports . .	24,000,000 „

The above factories employ 110,000 operatives, and the value of goods produced exceeds £8,000,000.

Bohemian linen is one of the oldest industries in Europe. It flourished in the fourteenth century, and still maintains a prominent place. In 1830 Bohemia raised 8000 tons flax, which was not sufficient for her linen factories, counting 60,000 weavers, who produce not only enough linen

for the Austrian empire, but also export a quantity worth £2,000,000 sterling per annum. The growth of this industry is shown by the exports:—

1865-66 . .	£990,000
1871-73 . .	1,670,000
1875-76 . .	1,884,000

In fact, the exports have doubled in the last ten years. Silk factories consume 2,000,000 lbs. silk, of which one-sixth is grown in the Tyrol, the rest imported. The factories are unable to supply enough silk fabrics for home use, although the manufacture has multiplied five-fold in ten years. The import of raw silk shows as follows:—

Average.	Raw silk.
1865-66 . . .	£292,000
1870-72 . . .	1,350,000
1875-76 . . .	1,490,000

Besides the home-made goods, Austria consumes imported silk fabrics to the value of £3,000,000 yearly.

There are 100 glass factories in Bohemia, and 70 in other provinces, producing wares to the value of £1,000,000 sterling, three-fifths of which are exported.

Bohemia has 1000 breweries, and the other provinces in proportion. The total product is 270,000,000 gallons, an increase of 50 per cent on the returns for 1852. The exportation averages 4,000,000 gallons, leaving 266,000,000 for home consumption, or 7½ gallons per head.

The sugar industry has increased as follows in twenty years:—

	1857.	1878.
Sugar-mills . . .	91	217
Beet-root . . .	410,000 tons	3,700,000 tons

The annual production of beet-sugar is over 300,000 tons, worth £6,000,000 sterling, of which one-half is exported.

Flour-mills constitute a very important industry. The single district of Szegedin has 300 floating mills on the Theiss. In 1877 the flour-mills of Hungary produced 1,500,000 tons flour, of which only 50 per cent was kept for home use. There are no fewer than 24,000 wind, water, or horse mills in Hungary, but their number is decreasing with the introduction of steam-power.

The growth of Austrian manufacturing industry in forty years is shown by the consumption of coal.

1839	500,000 tons
1864	3,500,000 ,,
1878	14,300,000 ,,

MINERALS.

At the beginning of the century Transylvania was called "the gold-mine of Europe," the yield of the Kremnitz for 100 years averaging £300,000 per annum. Various mines of iron, copper, etc., were also carried on with such activity that Hungary had 45,000 miners, and at least as many more were employed in Illyria, Bohemia, and the salt-mines of Galitzia. Thus the annual yield of mines was not far short of £3,000,000 sterling in 1830, since which time it has more than doubled. The mining interest reached its highest point in 1873, when the total product was up to £9,000,000; but since then the iron industry has so much declined that the minerals do not now sum up £7,000,000:—

Coal	£3,320,000
Iron	1,710,000
Sundries	1,770,000
	£6,800,000

Coal is increasing, the output now averaging 12,000,000 tons, or 20 per cent more than in 1873. The supply is,

nevertheless, insufficient, and Austria has to import 3,000,000 tons yearly. The production of iron, in like manner, is so far short of the requirements, that the importation in the last ten years averaged 400,000 tons per annum. Styrian ore is considered equal to Swedish in quality, and yields about 45 per cent of metal. In the last century the Idria quicksilver mines averaged 600 tons per annum, but now they do not reach one-third of that quantity. These mines formerly exceeded the yield of the Almaden mines in Spain. Copper-mines in Hungary were advantageously worked before the present century. Most of the works, however, had been destroyed, the mines lying idle for several years. The ore is not rich, barely 4 per cent being pure metal.

Tin is extracted in Bohemia, and lead in Illyria. Sixty per cent of the lead ore is metal.

The salt-mine of Wieliczka in Galitzia, at the base of the Carpathians, is the greatest in the world, extending 600 miles, and seeming inexhaustible. For six centuries it has given prodigious quantities of salt. The Government has a monopoly, and sells the salt at £10 for home consumption, or £1 per ton for exportation. The works occupy 9000 miners.

The various mining and furnace works employ 84,000 men, 6000 women, and 2100 children, the distribution of hands being as follows:—

	Hands.
Coal	62,650
Iron	13,360
Silver	5,380
Lead, etc.	10,710
	92,100

The coal-miners raise 12,000,000 tons a year, which

represents £72 per miner. The iron miners and founders turn out twenty tons, worth £120 a head. The product of the lead-mines is £80 each; and the general average of all mining £87 per head.

Notwithstanding the depression, especially in iron, which has prevailed for a couple of years, it is likely mining will take strength owing to the better economy in working. Each miner now produces much more than the average of 1873:—

	Coal.		Iron.	
	Miners.	Per head.	Operatives.	Per head.
1873	66,742	153 tons	20,823	17¾ tons
1876	62,650	192 ,,	13,360	20½ ,,
Increased yield per head .		26 per cent		16 per cent

In like manner the production of silver has in seven years increased 65 per cent per head.

The royalties on all the mines in the empire were £70,000 in 1869, and at present exceed £124,000 sterling. The miners have, in the last seven years, constructed 700 miles of railway.

Steam-power is aiding efficiently in the development of the mines, the number of engines at work having nearly doubled in seven years.

	1869.	1876.
In coal mines . . .	447 engines	842 engines
In other ,, . . .	63 ,,	118 ,,
	510 ,,	960 ,,

The miners are a prosperous and thrifty class of people. The masters provide them with schools, libraries, hospitals, etc., besides which the men have 355 joint-stock banks, holding an aggregate capital of £717,000 sterling.

COMMERCE.

The trade of the empire has multiplied eight-fold in forty years, and twenty-seven-fold since the Treaty of Vienna—

	Imports.	Exports.	Total.
1819 .	£3,200,000	£3,000,000	£6,200,000
1841 .	10,400,000	11,300,000	21,700,000
1851 .	15,600,000	13,400,000	29,000,000
1866-67 .	35,800,000	45,300,000	81,100,000
1875-76 .	81,400,000	78,650,000	160,050,000

The country lay in a state of extreme depression for thirty years, owing to the want of roads, the super-abundance of paper-money, the degraded condition of the peasantry, and the absence of any desire on the part of the nobles to improve even the breeds of sheep. The first impulse given to trade was the formation of the Austrian Lloyd's company in 1833, which rapidly extended its commercial relations in the Levant. The second element of progress was the Danube Steam Navigation Company in 1850, which proved so successful that the company two years later established a number of tug-steamers connecting the Hungarian ports with the Black Sea and Dardanelles. The company reduced its fares in 1865, and the receipts at once rose 22 per cent. The Danube was only opened to the flags of all nations in 1856, yet the competition has not prejudiced the earnings of the company in question:—

1850-56	average earnings .	£700,000	per annum.
1860-65	,, ,, .	900,000	,,
1866-70	,, ,, .	1,100,000	,,

The Danubian company's fleet has nearly doubled in twenty years, and counts at present 193 steamers, with an aggregate horse-power of 17,200. The number of passengers averages 1,250,000 yearly, and the goods traffic

1,350,000 tons. The Austrian Lloyd has seventy-one superb ocean-steamers, with 16,000 horse-power, Clyde-built vessels. The earnings in 1878 amounted to £984,000, and the dividend to 10 per cent. There is but small increase in the mercantile marine of the Austrian empire during the last ten years :—

	1869.	1878.
Steamers . .	47,242 tons	55,383 tons
Sailing . .	269,135 ,,	269,700 ,,
	316,377 ,,	325,083 ,,

The tonnage of entries in Austrian ports has increased 33 per cent in ten years, viz.—

	1865-66.	1875-76.
Austrian arrivals .	2,790,000 tons	3,605,000 tons
Foreign do. .	390,000 ,,	597,000 ,,
	3,180,000 ,,	4,202,000 ,,

The balance of trade for twelve years shows as follows :—

	Imports.	Exports.	Surplus.	
1865-70 .	£286,000,000	£320,000,000	£34,000,000	exports
1871-76 .	489,000,000	424,000,000	65,000,000	imports
	£775,000,000	£744,000,000	£31,000,000	imports

The general average for the twelve years results as follows :—

Imports . . .	£64,500,000 per annum
Exports . . .	62,000,000 ,,
Surplus imports .	£2,500,000 ,,

RAILWAYS AND CANALS.

The first care of the Government after the Peace of Vienna was to construct roads. In the interval between

1815 and 1875 no less than 60,000 miles of macadamised highroads were made, most of them at prodigious labour and expense. The road from Verona to Bukovina is 1000 miles long, traversing the whole empire and crossing the Alps, besides which various radiating highways were made to connect Vienna with the frontiers of Saxony, Bavaria, and Prussia. Sixty passes were made over the Alps, some of them with casemate protection against the avalanches. The Stelvio Pass is a greater work than either the Simplon or Mont Cenis.

Railways may be said to date from 1849; the Linz and Budweiss line was twenty years previous, but generally worked by horses. At first the Government made the principal lines, but it was soon compelled by fiscal exigencies to sell them to French and German companies. The progress of construction in the last few years is very remarkable.

	Miles in traffic.
1855 . . .	1,760
1868 . . .	4,390
1878 . . .	12,100

The total at present is made up as follows:—

Austria . . .	7,296 miles
Hungary . . .	4,274 ,,
Mining and tramways	530 ,,
	12,100 ,,

During a period of six years the new lines opened to traffic (1868-1874) averaged 1000 miles yearly. This in great measure explains the circumstance of the trade of the empire doubling between the years 1866 and 1876.

The traffic returns for 1878 compare with 1868 as follows:—

	1868.	1878.
Miles open	4,390	12,100
Cost	£85,000,000	£255,000,000
Number of passengers	14,500,000	36,000,000
Goods, tons	20,000,000	48,000,000
Receipts	£12,000,000	£18,500,000
Expenses	£7,500,000	£11,000,000
Traffic per mile	£2,730 per ann.	£1,530 per ann.

There are but two canals of much value, that which connects the Theiss and Danube, 80 miles in length, and that from Vienna to Neustadt, 33 miles. The Danube is only at certain seasons available for commerce: in winter it is frozen, and in summer that portion between Presburg and Vienna is only navigable for vessels under two feet draught. Formerly all communication between opposite banks of the Danube at Buda-Pesth depended on a bridge of forty-seven boats chained together, except in winter, when the ice offered a secure highway. Now there is not only a fine suspension bridge, but also a railway across the Danube at this point.

INSTRUCTION.

The times have changed since an Austrian Kaiser said, "I want not my subjects to be scholars, but to obey my orders." The Government has laboured for thirty years to promote the instruction of the masses, on which all constitutional government must seek its most solid basis. The empire of the Hapsburgs is not precisely on a footing with Scotland, United States, or Prussia, as to popular education, but it has made great strides in forty years.

	Schools.	Children.	Ratio to pop.
1837	16,754	1,562,500	5½ per cent
1870	31,100	3,189,000	9 ,,

The grade of instruction as represented in the attendance at the above schools is as follows:—

	School children.	Not at school.
Austria and Tyrol	90 per cent	10 per cent
Moravia	90 ,,	10 ,,
Styria	80 ,,	20 ,,
Hungary	76 ,,	24 ,,
Illyria	47 ,,	53 ,,
Galitzia	27 ,,	73 ,,
Bukovina	20 ,,	80 ,,
General average	70	30 ,,

In Austria 57 per cent of the adults can read and write, in Hungary only 39 per cent.

In 1830 there were but 58 printing-presses in the whole empire; at present there are 122 in the city of Vienna alone. In 1870 the number of newspapers was 362, and of so many tongues is the monarchy composed that only one-half of the above number appeared in German. There are 45 literary and scientific societies, with 15,600 members. Some of the universities have valuable libraries, *e.g.* Vienna, 300,000 volumes; Prague, 100,000; the number of public libraries being over fifty, with 3,000,000 volumes.

BANKS.

The Imperial Bank of Vienna was founded in 1816, and ceased to exist on January 1, 1880, when it was transformed into the Austro-Hungarian Bank. It had the sole right of emission, and a capital of £11,000,000 sterling. The increase of its business from 1840 to 1876 was as follows:—

	1840.	1876.
Discounts	£30,830,000	£78,190,000
Deposits	...	11,006,000
Gross earnings	528,600	984,200
Dividends	4 per cent	7¾ per cent

The bank issued mortgage bonds on house and landed property. The amount in circulation in 1878 was:—

On lands	£7,920,000
,, houses	2,390,000
	£10,310,000

The bullion reserve was £16,500,000, or 56 per cent of the amount of its notes in circulation.

The joint-stock Banks of Vienna suffered so heavily during recent stormy periods that their numbers are declining.

	1876.	1877.
Number of banks . .	17	14
Capital . . .	£13,850,000	£11,438,000
Bills in safe . .	10,091,000	11,302,000
Advances . . .	16,420,000	13,020,000

The Bank of Hungary, founded in 1842, with a capital of £200,000, becomes merged in the new Austro-Hungarian Bank, which will have the sole right of issue in Austria and Hungary.

The business of the National Bank of Hungary for the year 1877 showed as follows:—

Discounts . . .	£3,238,000
Mortgages . . .	5,980,000
	£9,218,000

In the official reports of 1875 the following summary of banks and joint-stock companies shows the rapidly increasing prosperity of Hungary:—

	1867.	1874.
Banks and companies .	59	386
Capital . . .	£7,000,000	£15,500,000
Deposits in banks .	11,500,000	18,500,000

There are 170 joint-stock banks in Austria and Hungary,

the aggregate of their paid-up capital and deposits amounting to £49,000,000. There are also 557 savings banks with nearly 2,000,000 depositors, the deposits reaching a total of £79,150,000, being the largest sum held in savings banks in any country of Europe.

WEALTH AND FINANCES.

Twice in the first quarter of the present century the empire formally declared bankruptcy, in 1811 and 1814, by paying the holders of Government paper money from 20 to 40 per cent of the amount of their notes.

	Notes called in.	Amount paid.	Rate.
1811 .	£106,000,000	£21,000,000	20 p. c.
1814 .	25,000,000	10,000,000	40 ,,

The incidence of taxation is high, owing to the rapid growth of public debt.

	Debt.	Per inhab.	Expenditure.	Per inhab.
1840 . .	£125,000,000	£4	£30,000,000	20s.
1879 . .	419,000,000	12	66,000,000	36s.

The debt is equal to 28 per cent of the capital of the empire, and the taxation absorbs 15 per cent of the income. It is, however, gratifying to observe that these burthens are relatively much lighter than forty years ago, the national earnings having more than trebled, while the taxation has only doubled.

The capital and income of the empire are as follow:—

	Capital.	Income.	Ratio.
Agricultural . .	£1,564,000,000	£263,000,000	17 p. c.
General and commercial	1,215,000,000	162,000,000	13 ,,
	£2,779,000,000	£425,000,000	15 p. c.

This gives an average of £78 capital and £12 income

for each inhabitant, about half the ratio of France. No country (except the United States) shows so high a return for agricultural capital, which is explained by the fact that cultivated land may be bought for £16, and the forest and pasture at £5 per acre. The profit on the general and commercial capital, on the other hand, is less than in most countries.

In one respect Austria has an immense advantage over the rest of Europe: her rural industry is unfettered by encumbrances, the total of rural mortgages being under £120,000,000, or 7 per cent of the agricultural capital. Moreover, the interest charged is very low, one-third of the mortgages being due to rural banks, and the rest to private lenders at 7 per cent.

To judge by the savings banks, which show an increase of £2,250,000 per annum during the last eighteen years, there is a considerable accumulation of wealth each year; the increase of the savings banks (*vide* Appendix) is only surpassed by Germany, and the ratio of deposits for population is equal to Great Britain.

ITALY.

UNTIL recently Italy was but a geographical expression. Since the beginning of the century she had seen her territory occupied alternately by French and Austrian troops, but it often happened that her foreign masters promoted substantial progress. The French introduced many reforms, legislative and municipal; they abolished the torture of prisoners, and compelled the inhabitants of the principal cities to attend to hygienic regulations. Owing, however, to the divided condition of the country, the want of roads, the restrictions on commerce, and the ignorance of the masses, there was little or no advancement in the first half of the century. Down to 1850 it was common to meet three pair of oxen drawing a pipe of wine; the peasants could not export grain unless whenever the municipal authorities saw fit; brigandage formed a prevalent feature in rural life; and the inhabitants counted the hours from sunset to sunset, up to 24 o'clock, sooner than adopt what they termed the "tempo Francese," or ordinary method. It is only within the last thirty years that the country has fairly entered on the path of progress; railways have been constructed through all parts of the peninsula; schools are multiplying in every province; and most of the obstacles to commerce have been removed.

Population has increased but slowly, say 33 per cent in sixty years :—

1820	. . .	21,350,000 inhabitants
1850	. . .	23,472,000 ,,
1878	. . .	28,944,000 ,,

During the thirty years preceding 1850 the increase was only 3 per 1000 per annum; in the years subsequent to 1850 it has been uniformly 7 per 1000. Although the birth-rate is higher than in England, the rate of increase is much less.

Per 1000 inhabitants.	Italy.	England.
Births . . .	38½	36
Deaths . . .	30½	22
Increase . .	8	14

The average birth-rate in Italy was 36½ per 1000 previous to 1870, but since that year it has been 38½; the marriage-rate has in like manner risen from 14½ to 15½ per 1000. Illegitimate births are as 6½ per cent, which is much higher than in England, but considerably under the European average of 8 per cent.

The diet of the poorer classes is insufficient to maintain the naturally robust physique of the race. Signor Bodio shows that 38 per cent of the conscripts are rejected by the army surgeons—that is, 15 per cent for being under the required height (5 feet 2 inches); and 23 per cent for physical defect.

Although the Italians are so temperate in eating and drinking, so exempt from gout and other diseases, the average of life is one-third shorter than in England, being only twenty-eight years. This is mainly due to the enormous mortality of children under five years, which is exactly 50 per cent higher than in England, viz.—

	Italy.	England.
Die under five years .	39 per cent	26 per cent
Complete fifth year .	61 ,,	74 ,,

Hence it will be seen that the difference in the mortality of adults is not so great between the two countries

as might appear. Insanity is rare, owing to the sobriety of the people: the rate is 1 in 4800 inhabitants, or one-twelfth of the rates in Ireland, Scotland, and Norway. Emigration has no visible effect on the population. About 30,000 persons leave Italy every year for South America, and the stream of returning emigrants ranges from 10,000 to 20,000. Crime appears to have increased in recent years,[1] since the abolition of capital punishment.

AGRICULTURE.

The garden of Europe is by no means as well cultivated as it might be. Some parts, indeed, are models of agriculture, such as Lombardy; others are equally fertile, but utterly neglected. The irrigated plains of Lombardy rent for £6, and even £7, per acre; in that part of Italy 90 per cent of the land is under crops. Sicily, on the other hand, which for centuries fed both the Roman Empire and Carthage, does not now raise enough grain for her two million inhabitants, although in the most deserted parts of the island the traveller comes upon a rich loam, ten to eighteen feet thick. Portions of Tuscany and Naples are fairly cultivated, but the Campagna di Roma is a howling waste, except such patches as are tilled periodically by the Abruzzi peasants.

The latest returns show as follows:—

	Acres.	Crop.	Per acre.
Wheat .	11,550,000	142,000,000 bushels	12½ bushels
Maize .	4,220,000	85,000,000 „	20 „
Barley and oats	2,130,000	38,000,000 „	18 „
Potatoes .	170,000	20,000,000 „	110 „
Carry forward	18,070,000		

[1] In 1874 there were 3438 murders and 31,474 cases of stabbing, say 1 in 9100 inhabitants murdered and 1 in 980 stabbed, one-fourth of the murders being in Sicily (Kolb).

	Acres.	Crop.	Per acre.
Brot. forward	18,070,000		
Vines .	4,620,000	660,000,000 gallons	145 gallons
Olives .	2,260,000	33,000,000 „	15 „
Rice, beans, etc.	2,340,000	...	...
Total tillage	27,290,000		

The rest of the kingdom is composed of 12,500,000 acres forest, and 32,000,000 of mountain and pasture—the total area being under 72,000,000 acres. There are 1,865,000 land-owners, thus giving an average of 39 acres to each estate; but the lands are very unevenly distributed.

	Owners.	Million acres.	Average.
Lombardy and Piedmont .	1,180,000	19	16 acres
Tuscany and Romagna .	145,000	16	110 „
Naples . . .	120,000	21	180 „
Rest of Italy . .	410,000	16	40 „
	1,865,000	72	39

Most of the owners in Lombardy and Piedmont till their own lands, but in Central and Southern Italy the estates are usually given out to tenants on the Metayer system or for rent. There are 604,000 estates, or one-third of the total in the kingdom, held in this manner. There are 1,248,000 Metayer tenants in Tuscany, Romagna, Modena, etc., holding 18,000,000 acres—an average of 15 acres each. Tenant-farmers paying rent are found mostly in Lombardy and Naples, to the number of 310,000, who hold altogether some 20,000,000 acres, or 66 acres each. The whole system of agriculture may be summed up as follows:—

	Number.	Area.	Average.
Proprietors . .	1,140,000	33,000,000 acres	30 acres
Metayers . .	1,248,000	18,000,000 „	15 „
Tenants . .	310,000	20,000,000 „	66 „
	2,698,000	71,000,000	26 „

The total of the agricultural population is as follows:—

	Males.	Females.	Total.
Farmers .	3,126,000	1,880,000	5,016,000
Labourers .	1,744,000	952,000	2,694,000
	4,870,000	2,840,000	7,710,000

Labour is relatively much dearer than in England, as the Marquis Ridolfi showed (1854), in this manner:—

	Italy.	England.
Crops per acre .	30s.	85s.
Labour . . .	50 per cent	32 per cent
Taxes . . .	17 ,,	30 ,,
Profit	10s. per acre	30s. per acre

According to the report of the British Secretary of Legation in 1868, the net profit was then nearly 16 shillings per acre. The land-tax varies from 9 per cent in Tuscany to 15 per cent in Lombardy. Some land-owners get nothing, unless in good years, from the Metayer tenants, nor is it unfrequent for them to have to pay the local taxes also, and thus suffer actual loss by reason of their estates. Meantime the peasants are (except in Lombardy and Piedmont) almost as poor as in Spain or Russia. Capital and machinery would perhaps improve the condition of affairs. The ordinary yield of wheat is eight-fold, the total grain crops barely reaching 265 million bushels, which is not sufficient for home consumption. The imports and exports of grain for ten years showed thus:—

		Tons.	Value.
1868-77	Grain imports (ten years) . .	3,100,000	£35,300,000
,,	Do. exported ,, . .	1,900,000	21,000,000
Surplus imports	,, ,, . .	1,200,000	14,300,000

This is an average of 120,000 tons imported annually, at a cost of £1,500,000 sterling.

Italians boast, probably with reason, that the Po valley

irrigation is unsurpassed in the world. Every day in summer a volume of 45 million tons of water is diffused over an area of 1,370,000 acres of teeming fertility, by means of an elaborate system of sluices and canals. The water supply is measured through little gates, and the permanent right to one inch of water has been sold for £500, and even £800 sterling. A farmer having, say, 100 acres in the valley of the Po, pays £600 a year rent; for three consecutive years, rice, then two years meadow. So rich are these lands that 100 acres will support 120 cows, each of which yields £8 worth of cheese and butter annually.

Sometimes the landlords give these lands on halves, expecting a net return of about £5 per acre. The average crop of rice is treble the weight of wheat per acre. It is, however, so unhealthy a mode of agriculture that the death-rate of labourers is very high. The area under rice is only 460,000 acres.

Cheese.—The kind commonly known as Parmesan is probably the best in the world. The yield has been variously stated; sometimes 11,000 tons, sometimes 35,000 tons. Each cow gives 300 lbs. cheese per annum, worth £10 sterling. About 100,000 cows come from Switzerland every year and produce 14,000 tons of cheese, value £1,000,000 sterling, after which they are again driven back to Switzerland.

Wine and Oil.—The vintage varies from 600 to 700 million gallons, or little more than half that of France, the area under vines being about one-fifth less in Italy. Some of the best wines are grown in Sicily. The production of wine and oil is returned as follows:—

	Wine.	Oil.
North and Central Italy .	440,000,000 gallons	14,000,000 gallons
Naples	52,000,000 ,,	13,000,000 ,,
Sicily	160,000,000 ,,	6,000,000 ,,
	652,000,000	33,000,000

The exportation of wine is increasing very rapidly, being now 9 million gallons, or 50 per cent more than in the years 1865-66-67. The shipments of oil have in the same time grown 36 per cent. An acre of vineyard gives, as stated above, 145 gallons of wine, against 220 gallons in France, and 75 gallons in Spain. An acre of olive-grove produces 4¼ bushels of olives, equivalent to 14 gallons of oil, as compared with 16 gallons per acre in Spain.

Pasture.—The half of Italy is under pasture in a natural state. Ten million sheep and cows are tended in the plains and valleys. Numberless goats find sustenance in the rocky Apennines or Abruzzi, and thousands of swine are fattened in the oak and pine forests. There are large numbers of buffaloes, in a tame state, used for ploughing and draught.

The returns of stock show 15 million head of all kinds, viz.—

	Number.
Cows . . .	3,490,000
Horses and mules .	950,000
Asses . . .	502,000
Sheep . . .	7,150,000
Pigs	1,470,000
Goats . . .	1,720,000

The total value of the above stock is almost £60,000,000, an average of £2 for each inhabitant, or little more than one-third of the European average.

The rural products may be summed up thus:—

Grain	£54,000,000
Wine	27,000,000
Oil, rice, fruit, etc. . .	22,000,000
Silk	11,000,000
Pastoral products . .	28,000,000
	£142,000,000

This is an average of £5 per inhabitant, whereas if Italy were better cultivated the ratio would be two or three times as much.

MANUFACTURES.

Great progress has been made in the last twenty-five years, reviving in a measure many of those industries which had gained wealth and renown for Italy in the Middle Ages. There was almost a blank interval from the peace of 1815 down to 1850, the men of capital preferring to invest in lands, rather than submit to capricious regulations affecting all classes of industry. In some districts the peasants were allowed to export wool, in others it was a felony; and in like manner manufactures were subject to interference.

Venice no longer counted her thousands of silk operatives; even her glass industry languished.

Florence, whose woollen factories in the last century employed 30,000 hands, was now a city of quiet retirement. The Tuscan maidens were the sole manufacturers of Leghorn bonnets, and exported £130,000 worth to England.

Milan made locks and keys and other hardware instead of the steel blades of former times. The Etrurians had long since forgotten the art of their ancient pottery. Cheese was the only manufacture that flourished.

Such was the decadence that a traveller in 1820

mentioned that in a city of 20,000 souls he was unable to obtain a pair of gloves, and in a town of 11,000 inhabitants he could not get a piece of soap. Silk was the first industry to revive, and others followed in its train. At present the chief manufactures are stated as follows:—

Silks	£5,230,000
Cottons	5,110,000
Woollens and hemp . . .	3,850,000
lour and macaroni . .	22,400,000
lass, hardware, leather . .	3,300,000
elvet, fine arts, etc. . .	2,400,000
	£42,290,000

All the above are carried on in Lombardy and Sardinia, besides which the Genoese boat-builders construct 100,000 tons of shipping yearly. Genoa produces velvet to the value of £500,000 sterling. In Southern Italy the manufactures belong more properly to the fine arts, such as mosaics, cameos, coral, etc. Flour mills occupy a large number of hands in many districts. Most of them are water-mills, built on rafts, on account of the periodical fall of the rivers.

It is gratifying to observe that while the agricultural products, judging by exportation, show an increase of 20 per cent in the last ten years, there has also been a remarkable growth of manufactures and minerals, viz.—

	Increase.
Cotton fabrics . . .	150 per cent
Woollen ,, . . .	52 ,,
Silken ,, . . .	190 ,,
Iron ,, . . .	32 ,,
Lead ,, . . .	25 ,,
Sulphur . . .	18 ,,

Minerals.—Sulphur has long held the foremost place,

the world getting most of its supply from Sicily. There are 600 sulphur-mines near Girgenti, employing 22,000 men, and producing over 200,000 tons per annum,[1] worth £6 per ton. Elba was famous for its iron in the time of the Romans. Small quantities are still extracted, but it is sent to Wales for smelting, as fuel is scarce and dear. There is also a superior kind of iron obtained at Brescia, which is made into steel, at Milan, for cutlery. Lead is found in many places, in sufficient quantity to allow 25,000 tons for exportation over and above home consumption. Carrara marble is another valuable mineral, chiefly used for statuary.

Silk.—This is the most valuable of Italian products, the annual exportation of raw silk averaging £10,000,000 sterling. Lombardy is the chief seat of this industry, the silk grown being almost wholly (96 per cent) of Japanese seed. The eggs or seed are imported from Japan on cards at a cost of £12,000 sterling per ton (say 7s. per oz.) the average importation being from 70 to 80 tons per annum. The eggs were formerly more prolific, and yielded 50 lbs. of cocoons per oz., but at present an ounce gives only 35 lbs., worth about 50s., or seven times the cost of the eggs. The single province of Lombardy raises an annual crop of 11,000 tons cocoons, worth £200 per ton. For a period of thirteen years down to 1878, the silk trade of Italy may be summed up thus:—

Paid for Japanese eggs .	£13,200,000
Exported raw silk . .	127,600,000
Profit .	£114,400,000

The production at present averages 50 per cent more than it did ten years ago, as shown by the official returns.

[1] In 1860 the shipments were under 70,000 tons.

Annual average.	Tons.	Value.
1865-1868 .	1940	£7,300,000
1869-1873 .	2880	11,570,000
1874-1877 .	3110	10,160,000

Italy produces one-third of the silk of the world. There are factories for "throwing" the silk at Milan and Turin, and some of the fibre is consumed at home in the manufacture of velvets and damasks: but the chief quantity is exported to France for the Lyons factories.

COMMERCE.

In the early part of the century the trade with foreign countries was small. The mercantile glory of Venice had passed away. The import trade consisted of grain from Odessa, beans from Egypt, cottons from England, and dry cod-fish from Canada. The exports included Genoese velvets, Sicilian wines, Lombard silk, and oil from Lucca. The new epoch may be said to date from 1850, when industry received an impulse from the new railways. If we take for example the trade of Genoa we find it doubled in thirty years, viz.—

1835 . .	£8,220,000
1867 . .	14,410,000

In 1835 Genoa had 150 sea-going vessels: in 1867 she built more than that number yearly. It is only since Italy has been constituted as one kingdom that any exact statistics of commerce can be arrived at. The increase in thirteen years has been very great both in imports and exports:—

Imports.	Increase.	Exports.	Increase.
Coal	160 p. c.	Silk	36 p. c.
Raw cotton and yarn	230 ,,	Oil	35 ,,
Sugar . . .	33 ,,	Cattle . . .	141 ,,
Wool . . .	52 ,,	Wine . . .	42 ,,

Thus the increase in ten years has been fully 40 per cent, viz.—

	Imports.	Exports.	Total.
1865-70 Average .	£39,000,000	£31,000,000	£70,000,000
1875-77 ,, .	52,000,000	46,000,000	98,000,000

From the statements of Italian ports it appears the tonnage of vessels entering said ports has increased 15 per cent.

	1865-66.	1875-76.	Increase.
Italian . .	1,160,000 tons	1,290,000 tons	11 p. c.
Foreign . .	2,070,000 ,,	2,420,000 ,,	17 ,,
	3,230,000 ,,	3,710,000 ,,	15 ,,

The average trade for the last ten years has been £100,000,000. The balance against the country has been £6,000,000 per annum, but the imports of specie have, nevertheless, exceeded the exports by £100,000 yearly.

Italy has the fifth merchant navy in the world, having passed France since 1866, and being now very little behind Germany. The increase of shipping in ten years shows as follows:—

	1868.	1878.
Tonnage of steamers . . .	23,000 tons	58,000 tons
,, of sailing ships . .	860,000 ,,	1,010,000 ,,
Total	883,000 ,,	1,068,000 ,,

This is equivalent to a rise of 2 per cent. per annum.

INSTRUCTION.

The parent of arts and letters had been for more than a century one of the most backward countries in education. The universities of the Middle Age stand in grass-grown streets. Padua, which counted 18,000 students, has even now but 300, and the other great schools are in like decadence. There is, however, at present a marked tendency to

improvement in popular education, the number of adults who can read and write increasing every year. The proportion in 1861 was barely 35 per cent, whereas in 1878 it had risen to 45 per cent, being three times as high in Sardinia and Lombardy as in Sicily or Naples. The ratio of school children to population has more than doubled since 1830, and is now the same that it was in France forty years ago. On comparing the post-office returns, it will be, moreover, seen that the ratio of letters to each inhabitant has risen 33 per cent in the last ten years. There are 210 public libraries, with 4,000,000 volumes, and 950,000 readers yearly. In fine arts Italy still holds the foremost rank, and her galleries of pictures and statuary would, if placed in a line, form several hundred miles in length. Literature has made notable advancement in recent years, there being now 1120 newspapers, the largest in circulation being the *Secolo* of Milan, 55,000 copies daily. The number of new books published averages 1520 yearly.

RAILWAYS AND CANALS.

The first railway was constructed in 1839, but nothing more was done for twenty years. The present complete system may be said to have been commenced in 1861, there being now 5130 miles in traffic, representing an outlay of £101,000,000. Nearly one-half of the existing lines were made by Government, which caused an increase of £50,000,000 to the National Debt. The general profit on all the lines does not exceed 2¼ per cent on the cost, owing to the lightness of the goods traffic; the statement for 1876 showing as follows:—

Passengers	28,000,000
Goods	7,000,000 tons
Gross earnings . . .	£1260 per mile
Working expenses . .	£840 „

Canals are more used for irrigation than traffic. Of the twelve in Lombardy only two are navigable, those of the Ticino and the Cavour. The shorter ones of Pavia, Padua, Pisa, etc., are little more than aqueducts. The cost of the Cavour canal was £2,500,000 sterling; it discharges 110 tons of water per second from the Po into the Ticino. The sums expended by the State in draining Lake Bientina, near Pisa, and the marshes of the Campagna di Roma amounted in 1876 to £1,740,000. The newest canal is that made by Duke Torlonia at Lake Fucino, near Terracina, reclaiming 37,000 acres of land. The total inland navigation is officially stated to reach 1875 miles between rivers and canals.

BANKS.

The Bank of Italy has a capital of £9,000,000 and the right to emit £40,000,000 of inconvertible notes; the deposits average £5,000,000. The banks of Rome, Tuscany, and Naples have an aggregate paid-up capital of £4,250,000. There are, moreover, 226 joint-stock and private banks, whose registered paid-up capital reaches £15,500,000.

In 1866 rural banks, called Credito Fondiaro, were established at Naples, Milan, and other large cities, to make advances not less than £40, nor over £20,000, to land-owners on mortgage of their properties up to 50 per cent of their value. The banks gave the borrowers mortgage debentures, charging 5 per cent interest and 1 per cent sinking fund per annum. The emission averaged £500,000 sterling yearly; and in 1869 the debentures had fallen to 77 per cent in the market, so that the borrower actually paid 8 per cent per annum. In 1870 were founded two other banks, the Agricola Nazionale

and the Agricola Italiana, on the same principle as the preceding.

Savings banks were first introduced in 1822 at Venice and Milan, but their progress was, until recent years, slower than in the rest of Europe. The returns show as follows :—

	Banks.	Depositors.	Amount.
1825 . . .	11	...	£108,000
1860 . . .	125	...	13,925,000
1878 . . .	3627	1,115,000	28,094,000

From 1875 till 1878 the number of depositors increased 100,000 per annum, and the amount of deposits £2,200,000 per annum. The average of each deposit is £25, and the limit is £200, the Government guaranteeing 4½ per cent interest. One-third of the deposits is under £4 sterling.

Although Italy was the first country in Europe to establish banks, the banking power of the kingdom is relatively small, say £65,000,000, or 4 per cent of the capital of the country.

FINANCES AND WEALTH.

The national wealth and income are greater than those of Spain and Portugal combined, but still comparatively small :—

	Capital.	Income.	Ratio.
Agricultural . . .	£1,048,000,000	£142	13½
General and commercial .	565,000,000	88	15½
	£1,613,000,000	£230	14¼

This gives an average of £57 capital and £8 income for each inhabitant. The income-tax lists give a much lower return, less than half; but adopting their classification, the above total would be distributed thus among the heads of families :—

	No. of persons.	Average Income.	Total.
First class . . .	615,000	£130	£80,000,000
Second ,, . . .	601,000	80	48,000,000
Third ,, . . .	2,435,000	30	73,000,000
Fourth ,, . . .	2,120,000	12	25,000,000
Families . . .	5,771,000	£39	£226,000,000

There are 97,000 persons of the first class resident in the six largest cities, Naples occupying the foremost rank for affluence, and the others being in this order:—Turin, Milan, Palermo, Rome, and Florence. An Italian economist has estimated the income of the nation as high as £275,000,000, or nearly £10 per inhabitant, putting down the urban population at £30, the rural at £6 per head. If, however, the same method be adopted (see page 41) as in measuring the wealth of other nations, it will be found the Italian estimate is 15 per cent too high.

The incidence of taxation (including local) is the heaviest in all Europe, being 35 per cent of income, which is double the European average, and three times that of Great Britain. No other country has grown so rapidly in debt and taxation, as appears from the following Table:—

	Nat. debt.	Per inhab.	Nat. expend.	Per inhab.
1821 . . .	£33,000,000	£1¼	£8,320,000	8s.
1860 . . .	97,000,000	4	41,000,000	34s.
1878 . . .	405,000,000	14	59,200,000	41s.

Nor is it merely the weight of debt and expenditure that overpowers the energies of the nation, but still more the money-lenders who charge exorbitant interest. The whole kingdom, except Lombardy, is mortgaged up to half its value:—

	Valuation.	Mortgages.	Ratio.
Lombardy . . .	£80,000,000	£15,000,000	19 per cent
Rest of Italy . .	1,167,000,000	520,000,000	45 ,,
	£1,247,000,000	£535,000,000	43 ,,

Three-fourths of this sum is due on rural properties, the chief burthen falling on small farmers, as 70 per cent of the mortgages are found to be for sums less than £40. The medium rate of interest charged is 9 per cent in Piedmont, 16 in Naples, and 24 in the island of Sardinia; but some of the mortgages are actually paying 30 per cent per annum.[1] In order to remedy this evil, rural banks were founded in 1866 in various provinces, but their number and resources are insufficient for all needs. It is, meantime, gratifying to note a steady accumulation of wealth among the proletarian classes, as shown in the savings banks returns.

The annual increase of deposits for the last twenty years has been £820,000, an increase only surpassed by five other States in Europe. There is in Italy a large proportion of industrious, thrifty people, and as the last ten years have witnessed such remarkable increase of commerce, shipping, manufactures, and agricultural products, there is room to hope that the fortunes of the country will steadily improve. Economy in the national expenditure, and redemption of the inconvertible paper money, would work marvels in the condition of Italy.

[1] It is, doubtless, owing to such exorbitant interest that we find the amount of mortgages rose from £353,000,000 in 1862 to £535,000,000 in 1870, an increase of 50 per cent in ten years!

SPAIN.

SINCE the beginning of the century Spain has made great progress, in spite of civil wars, trade restrictions, and the want of highroads. In commerce, instruction, and legislation, we see (especially in the last four years) a notable improvement.

Although the proportion of married people is 2 per cent less than in the last century, and the loss of life has been so considerable in the Carlist wars and the Cuban rebellion, still the growth of population has been satisfactory—less, indeed, than in England and Germany, but four times greater than in France. There are, nevertheless, certain parts of Spain in decadence ; in Cadiz, for example, the deaths are regularly 5 per cent over the number of births. The census of 1870 showed that Spain had increased 33 per cent in thirty-seven years :—

	Population.
1833 . . .	12,287,000
1870 . . .	16,799,000

Some of the provinces, such as Galicia, are as thickly peopled as Ireland, others as sparsely as Russia. The birth-rate and death-rate are much higher than in England, *e.g.*—

Per 1000 inhab.	Births.	Deaths.	Increase.
Spain	37	30	7
England . .	35	22	13

The average span of life is eleven years less than in England. Infant mortality is excessive, 36 per cent of the

children dying before they complete five years. Illegitimate births are as 5½ per cent, being 1 per cent more than in England, and 2½ under the European average.

Whether from the insecurity for life or other causes, the rural population is much less than the urban, being as 16 to 84. And yet there are but five cities that have over 100,000 inhabitants, namely Madrid, Barcelona, Seville, Valencia, and Malaga. There are, however, eighty-eight provincial towns numbering over 10,000 souls, and 2700 villages of 1000 inhabitants or upwards.

The distribution of the inhabitants is as follows:—

Hidalgos or nobles	1,456
Lawyers and graduates	35,700
Officials, students, etc.	171,000
Merchants and manufacturers	231,000
Mendicants and vagrants	246,000
Shopkeepers and artisans	698,000
Farmers, shepherds, peasants	2,723,000
Persons of no occupation	1,384,000
Women and children	11,308,844
	16,799,000

In the last century the number of Hidalgos exempt from public burdens was 481,000. At present the nobility consists of two classes, there being in reality only 203 Spanish peers—

	Grandees.	Only titular.	Total.
Dukes	79	2	81
Marquesses	60	615	675
Counts	60	480	540
Barons	4	156	160
	203	1253	1456

Some of the above are far from wealthy, but the Dukes of Osuna, Alva, and Medina possess vast portions of the finest lands in the south, chiefly in Andalusia, which give a

rent-roll over £50,000 a year, being under the management of two or three hundred mayordomos.

There are 90,100 public officials whose salaries average £28 each, and 49,000 "jubilados" in receipt of pension, averaging £30 a year—together £4,000,000 sterling per annum.

Mendicancy is an institution of the country, as it has been for centuries. It was estimated in the last century that 100,000 beggars received victuals daily at the various convents, besides 60,000 poor students who went on begging tours. At present, besides the deserving or infirm poor, who are unable to work and must subsist on alms, having no provision from the State, there is a large vagrant population of idlers, gypsies, and contrabandistas.

The peasants are generally very poor, and the ordinary food for a family of four persons costs about a shilling a day; the workhouse paupers cost fourpence a head. Shepherds often rent caves (such as one sees near Grenada), for which they pay a shilling a month rent. Gypsies do not sensibly increase in numbers, being only 45,000. Most of them lead a wandering life, but sometimes they become innkeepers in the small towns.

So late as 1830 the system of law was as tyrannical as in Central Africa. No traveller could take more than £20 in coin out of Spain, and then only in gold; if he had any silver in his pocket he was sent to prison.

People can remember when the mails from Madrid to Barcelona and to Bayonne were robbed regularly once a month, when the "arrieros" paid a fixed toll for passengers and merchandise to the banditti, and when travellers went to Spain to see a bull-fight and to be robbed by highwaymen in the Sierra Morena. That picturesque mode of life has almost disappeared, partly owing to the introduction of railways, but mainly to the exertions of the Guardia Civil,

a superb body of rural police 15,000 strong, of which Spain is justly proud.

Crime was so prevalent fifty years ago that cases of murder and stabbing averaged 3000 yearly, or 8 persons stabbed daily. In 1827 there were 1223 persons murdered and 1773 stabbed, but some of the latter recovered. In 1844 the number of criminals convicted and sentenced was 31,740, or 1 in 450 of the inhabitants, the highest ratio being at Madrid—1 in 210, and the lowest in the northern provinces—1 in 850 persons. Since then the ratio of criminals has declined one half, the returns for 1850-1860 showing an average of 18,100 criminals, or 1 in 900, which is double the ratio for those years in the United Kingdom.

Much of the crime arises from poverty, and some of the local institutions seem expressly designed for reducing to pauperism as large a number as possible of the people. The octroi or "derecho de puertas," is awful, often 100 per cent on wine and 70 per cent on oil, yet the municipal arrangements are so wretched that in some places, such as Cadiz, the monthly cost of procuring water for house use is more than the rent of the house. In some cities the population declines every year in the same way as it increases in the rest of Europe.

Blindness is so common that the ratio is equalled or surpassed only in Egypt, being most frequent in the table-lands of Castille, which some supposed was due to the custom of bleeding; but it is doubtless the result of the dust and sun in the arid, treeless plains of La Mancha and Burgos. Insanity is rare, owing to the temperate habits and indolent life of the people, as also to their stoicism and gravity of demeanour. In the absence of statistics it may be supposed the ratio is the same as in Italy—1 in 4800. There were four lunatic asylums at Toledo, Valencia, Sara-

gossa, and Cordova, but the last has been closed for want of patients, there being now only three asylums in the kingdom.

Charitable institutions are more numerous than in most countries. There are 1771 hospitals and asylums, that accommodate 174,000 sick and afflicted; besides 3000 "positos" or relieving depôts for giving grain to poor persons in times of scarcity.

AGRICULTURE.

It is generally supposed, without any definite proof, that Spain was better cultivated in former times than at present. Its wheat was famous in the time of Hannibal; its "vegas" were of teeming fertility under the Moors. But Romans and Moors confined their labours mostly to the southern provinces, which are still highly productive. The table-lands of the centre and the frequent Sierra ranges were probably at all times as desolate as to-day, unless so far as the destruction of timber in modern ages has added to the aspect of sterility. The annual migration of sheep has been an institution of the country from the earliest ages, and somewhat checks agriculture, but there is still plenty of land for the plough, if the people were industrious.

It is remarkable that for three centuries the Spaniards held South America, where hundreds of millions of acres of the richest soil lay around them; yet they introduced no tillage, preferring pastoral occupations.

The area of Spain is 190,000 square miles, or about 120,000,000 acres, say three times the size of England. The following returns are official:—

Grain and wine . .	34,000,000 acres
Olives	2,000,000 „
Carry forward .	36,000,000 „

Brought forward	36,000,000 acres
Pasture	15,000,000 „
Woods	10,000,000 „
Mountains and waste	59,000,000 „
	120,000,000 „

In the rich southern provinces there are 2,500,000 acres irrigated, on the system originally introduced by the Moors. Castille and Andalusia produce the finest wheat in the world, but the system of culture is so rude that the crops are light—only fourteen bushels to the acre, or half the yield in England.

There are 25,000,000 acres under all kinds of grain, the crop averaging 300,000,000 bushels. From 1870 to 1876, notwithstanding civil war, the exports of grain averaged 5,225,000 bushels over the imports.

Fifty years ago the surplus crop was often suffered to rot on the ground, as the cost of freight was more than the market price. Roads were few and bad; mules carrying four bushels, and ox carts a ton, took six or eight days to go from Castille to the nearest seaport (150 miles), and freight varied from £3 to £6 per ton for that distance. Not only was it impossible to send the wheat abroad, but even the southern parts of Spain often paid famine prices, while it was rotting in the subterranean "silos" of the north. Take, for example, the average market-prices over two years for wheat and wine (1827-1828) as follows:—

	Wheat.	Wine.
Estremadura	19 reals	29 reals
Valladolid	21 „	9 „
Navarre	29 „	6 „
Madrid	34 „	22 „
Biscay	38 „	15 „
Seville	40 „	20 „
Barcelona	53 „	14 „
General average	32	16

The yearly average for wheat at Barcelona was three times what it was at Valladolid, and the common wine drunk by the "arrieros" was five times dearer in Estremadura than in Navarre, while the northern provinces were shipping wine to France, as that country was more accessible than the centre of Spain. Ox-carts paid a toll of twenty pence for every 100 miles, yet the roads were in a shocking condition, as may be judged from the small amounts expended on their repair, and on bridges, viz.—

	Year 1827.
Roads under repair . .	3300 miles
Bridges ,, . . .	35 ,,
Expenditure . . .	£91,000

A Spanish writer boasted that it took 30,000 ox-carts to convey the wheat crop of Castille to the "silos," or underground granaries, where sometimes the overstock was kept five or six years till scarcity brought higher prices. Before the French invasion there were 5000 "silos" in Spain. The number was still large until the Customs reform in 1869, previous to which time the importation of foreign grain was prohibited. In the years 1826 to 1830 the average price of wheat was—

	Inland.	Seaboard.
Per fanega . . .	21 reals	40 reals
Per bushel . . .	27 pence	52 pence

At present wheat is more used in the centre and south than in the north of Spain. The hardy Basques subsist for the most part on "borrona"—a cake made of maize flour. Rice is also largely used in some provinces.

From a statement published in 1840, and the official returns of recent years, it is easy to measure the development of Spanish agricultural interests, viz.—

	Value of Products.
1803	£51,000,000
1840	74,000,000
1877	107,000,000

The number of rural proprietors appears on the register to be 2,676,000, but this includes owners of house property in the towns and villages. Landed proprietors, as appears from the census, do not exceed 596,000, including nobles, hidalgos, etc. In all Spain there are but 3900 landowners whose rent-roll reaches £400 a year. Land varies extremely in value; the peasant of Valencia, using the Moorish system of irrigation, pays a rent of £5 or even £7 per acre, his farm rarely exceeding two acres. In the northern provinces of Biscay and Galicia land is cheaper, but the labour more severe. In the less cultivated parts of Spain a farm of two or three hundred acres may be rented at 4s. an acre, even the best land fetching only 16 shillings. The country suffers exceedingly from drought, the average rainfall not exceeding 16 inches. Water is so scarce in Upper Arragon that bricklayers often use wine for making mortar.

Vineyards cover 3,500,000 acres, or about two-thirds the area of those in France. The yield is nowise in proportion.

	Acres.	Gallons wine.
France . .	5½ millions	1250 millions
Spain . .	3½ „	260 „

Five-sixths of the wine is consumed in Spain, and only 44 million gallons exported, viz.—

6 million gallons sherry, four-fifths to England.
17 „ „ Valdepeñas, etc., to various countries.
21 „ „ Catalan, to France and South America.

The vineyards of Xerez, comprising 15,000 acres, produce annually 45,000 barrels of the best kind of sherry, which is said to keep 200 years without injury. France takes 10 million gallons of Catalan wine to replace some of the vintage she exports.

If we estimate the arroba of wine at 3 shillings, the annual crop in Spain will be worth £15,000,000 sterling, and allowing for the extra value of sherry, Valdepeñas, etc., the total cannot fall short of £18,000,000, including exports valued at £5,500,000. No fewer than 25,000 kinds of Spanish wine were sent to the Paris Exhibition. The vines give fruit at two and three hundred years old.

Olive oil is another valuable item of industry, the olive groves covering 2,100,000 acres; the yield is usually ten times what is required for home consumption, the average surplus exported being 2,500,000 gallons. The oil of Seville is mentioned by Cicero. The method of crushing the olives is as primitive as it was in his day.

The orange groves of Seville present a poor aspect to any one who has travelled through Paraguay and Brazil. Nevertheless, the trees, though stunted, are said to give sometimes from 1000 to 2000 oranges each. The gardens and orangeries of Andalusia cover approximately 100,000 acres. Some vineyards grow their fruit not for wine, but to export as raisins; bunches of grapes near Valencia have been found to weigh from 12 to 14 lbs., in those places artificially irrigated.

There are hardly any products that will not thrive in Spain. Maize was introduced from South America, and is grown largely in Valencia and Catalonia. Sugar-cane is of more recent introduction, and promises to be no less successful.

It is painful to see the plazas and suburbs of Cordova, Seville, Xerez, and other towns thronged with able-bodied mendicants basking in the sunshine, while one remembers that 90 per cent of the province of Santander, and 66 per cent of La Mancha, are as untilled as if they were situated in the moon.

Cattle Farming.—Katherine of Lancaster is said to have brought the first fine sheep into Spain from England, as part of her dowry, in espousing the Infante of Castille (1394). Since then some of the finest merino stocks have been sent from Spain to other countries, especially the Rambouillet and Saxony breeds. The flocks, in 1803, were said to number 12,000,000 sheep; but they have not much increased in seventy-five years. They are distinguished in two classes: first, the Mesta, or migratory sheep, about 5,000,000, which descend every winter, in troops of 10,000, to the lower lands of Estremadura, and return in summer to the mountains of Leon and Arragon; second, the permanent flocks, 9,000,000 head, which keep the same pastures all the year round.

The latest returns of farm-stock show 14,000,000 sheep, 3,000,000 goats, 1,500,000 horned cattle, 1,000,000 horses and asses, and 1,000,000 pigs, representing a total value of £36,000,000, or £2 for each inhabitant. It is worth observing that in Ireland the value of farm-stock is £10 to each inhabitant, or five times as much as in Spain.

The rural products of all descriptions may be summed up as follows:—

300,000,000 bushels grain .	£60,000,000
260,000,000 gallons wine .	18,000,000
Fruit, oil, vegetables, etc. .	9,000,000
Pastoral industry . . .	20,000,000
	£107,000,000

This is equal to nearly 13 per cent on the agricultural capital of the kingdom.

MANUFACTURES.

The value of manufactures produced annually is officially put down at £60,000,000, which is doubtless below

the reality. Cotton and woollen mills in Catalonia and Valencia occupy 45,000 hands, consuming 80,000,000 lbs. raw cotton, and 40,000,000 lbs. wool yearly. The commonest goods, owing to protective duties, sell at very high prices, the muleteers having to pay much more for the rudest cloths than the best fabrics cost in England. Silkworms were introduced by the Moors several centuries before this industry was known in France, and silk manufactures survived the Moorish overthrow, the mills of Valencia and Catalonia still giving employment to 16,000 operatives; the production, however, is insufficient for the demand, and Spain imports silk goods largely from other countries.

Tanning.—All the tanning of the kingdom is done by the Bascos in the north, or the English tanners in Andalusia. The Moors of Cordova established a fame for Cordova leather that is not yet forgotten.

Hardware.—Toledo swords are still unequalled for temper, which some ascribe to the water of the Tagus. The royal factory usually employs about 300 operatives. Firearms are made at Valencia, artillery at Seville, nails, horseshoes, and copper utensils in Biscay. The muleteers of Vittoria convey weekly a ton of horseshoes to the inland provinces.

Minerals.—No country of Europe is richer in minerals, yet the total number of miners employed is only 43,500. There is no return of the value of minerals extracted, which will probably reach £7,000,000, as the exports are over £5,000,000. This branch of industry has trebled in twenty years, the exports of minerals in 1860-61 not exceeding £1,400,000. The returns for 1875 to 1877 average as follow:—

Lead	£2,050,000
Copper . . .	1,650,000
Quicksilver . .	780,000
Iron . . .	460,000
Zinc . . .	240,000
	£5,180,000

The iron of Biscay, being specially suited for Bessemer steel and Krupp guns, is mostly exported to England and Prussia. The largest ironworks are those of two English companies, and of Messrs. Ibarra at Bilbao. The English companies at Cordova and Grenada have extracted such quantities of lead in the last twenty years, that other countries have had to suspend working their mines. The most productive coal-fields are those of Belmez and Seville, employing 10,000 miners, who extract only 300,000 tons yearly: this is barely one-third of the consumption in Spain, the rest being imported from England and Belgium. Previous to the discovery of quicksilver in California this article was almost a monopoly of Spain: the Almaden mines have been worked from the time of the Romans, and belong to the State; they employ 4000 miners, who raise 1500 tons yearly. Rio Tinto, near Seville, is the most productive copper mine. There are 2000 silver mines, but the yield is trifling; even the Sierra Morena mines give less than in the eighteenth century.

Pottery.—The clay known as Kaolin is used at Pickman's china factory in Seville, which employs several thousand hands. The royal porcelain factory at San Ildefonso is an imitation of Sevres, and does not pay expenses. Old Roman furnaces near Seville show that the Romans had works of a similar nature to those of Mr. Pickman.

COMMERCE.

With a seaboard of 1300 miles, Spain ought to be a first-class mercantile power, as she was in the seventeenth and eighteenth centuries. The loss of her American colonies in 1810 inflicted a great blow upon her trade, but was far less injurious than her subsequent customs-policy, a policy in system and details only worthy of the King of Dahomey. In 1854 a slight modification took place, followed by such increase of trade that a further step was taken in 1869, equally beneficial in results. The most notable improvement in exports has been in the last four years, since the accession of King Alfonso.

	Imports.	Exports.	Total.
1850 to 1854 .	£7,100,000	£7,200,000	£14,300,000 per an.
1863 to 1870 .	16,150,000	12,220,000	28,370,000 ,,
1875 to 1877 .	16,480,000	16,560,000	33,040,000 ,,

The trade with Great Britain has doubled since 1866, while that with France has declined. The merchant navy has almost doubled, being now seventh in the world, and coming next after the French.

Notwithstanding the extra duties on foreign bottom, most of the commerce during the present century has been in the hands of foreign shipowners. The tonnage of vessels cleared from Spanish ports has increased about 150 per cent in ten years.

Annual average.	Spanish vessels.	Foreign.	Total.
1860 to 1867 .	450,000 tons	850,000	1,300,000
1872 to 1874 .	1,230,000 ,,	2,300,000	3,730,000

Even the coasting trade of carrying salt from Cadiz to Galicia for the sardine fishermen is done by foreigners, chiefly Swedish vessels.

The following Table shows first the decline and then the revival of Spanish shipping :—

	Sailing vessels.	Steamers.	Total.
1859 .	460,000 tons	13,000 tons	473,000 tons
1872 .	340,000 ,,	45,000 ,,	385,000 ,,
1876 .	625,000 ,,	115,000 ,,	740,000 ,,

If the country remain at peace Spain will again become important in the carrying trade of the world.

INSTRUCTION.

The proportion of adults who can read and write is only 35 per cent, or less than half the ratio of England. Much progress has, nevertheless, been made in twenty years, the number of school-children having increased 75 per cent since 1861. Moreover, the returns for 1874 show that the number of persons who can read is exactly double what it was in 1848. The Press has also advanced in late years: the largest circulation of any of the Madrid papers was barely 3000 copies in 1867, whereas some of them now throw off five times that number. There are only twenty-nine public libraries, with an aggregate of 627,000 volumes. According to post-office returns the intellectual activity of the people has quadrupled since 1846, showing at present five letters per inhabitant, being ahead of Italy and Portugal.

RAILWAYS AND CANALS.

The year 1848 may be said to mark the introduction into Spain of steam locomotion by land and water. In that year there were twenty-four steamers of an aggregate of 3000 tons, and in the same year the first railway was opened, from Barcelona to Matarò, a distance of eighteen miles.

Since then a network of railways radiating from Madrid in all directions has been constructed. The engineering

difficulties were formidable, especially in crossing the Sierra Morena, Pyrenees, and other ranges. Yet the average cost of construction has been only £16,550 per mile. The existing lines (January 1880) are twenty-nine in number, the principal being as follow :—

Great Northern . . .	1115 miles
Madrid and Saragossa .	975 ,,
Ciudad Real and Badajoz .	376 ,,
North-Eastern . . .	272 ,,
Almanza and Valencia .	245 ,,
Twenty-four others . . .	1362 ,,
	4345 ,,

The total cost has been £72,000,000, viz.—

Expended by companies . .	£44,000,000
State subsidies	28,000,000
Total expenditure . .	£72,000,000

Comparing the returns for 1878 with those for 1872, we find a great increase of traffic, viz.—

	1872.	1878.
Passengers .	12,000,000	22,000,000
Merchandise .	4,500,000 tons	6,000,000 tons
Gross earnings .	£4,030,000	£5,210,000

Working expenses are the lowest in the world, averaging only 43 per cent of the receipts. The mileage earnings have risen from £1144 in 1864 to £1200 in 1878.

How much railways have promoted the industry of the country is shown by a Spanish writer comparing the exports in 1849 with those of 1873 in quantity—

Wine increased . .	600 per cent
Oil ,, . .	600 ,,
Lead ,, . .	300 ,,
Fruit ,, . .	300 ,,
General exports . .	300 ,,
General imports . .	150 ,,

The imperial canal of Arragon, begun in the last century to connect the Mediterranean and the Bay of Biscay, is far from completion. In combination with the canal of Castille the total length from sea to sea would be 405 miles, of which only 175 are made. The portions completed are 60 feet wide and 10 feet deep. The other canals in Spain are of trifling mention.

WEALTH OF SPAIN.

Nothing remains of the £980,000,000 of gold and silver that Spain drew from the New World in the seventeenth and eighteenth centuries. The adage of "Ill got, ill gone," has been fully borne out, and Spain is to-day much poorer than before the days of Pizarro, Cortes, or Almagro. While other nations accumulate wealth, Spain accumulates debt. The statement of capital and income is remarkably low :—

	Capital.	Income.	Ratio.
Agricultural . .	£840,000,000	£107,000,000	13 per cent
General and commercial	433,000,000	68,000,000	15½ „
	£1,273,000,000	£175,000,000	14 „

This shows about £75 capital and something over £10 income for each inhabitant, which is higher than the ratio in Italy or Portugal, but nowise comparable with the resources of the country.

Except Turkey or the Central American Republics, there is no country so plunged in debt as Spain—the proportion is as 43 per cent of the capital of the kingdom. The growth of debt and expenditure has been as follows :—

	Debt.	Per inhab.	Expenditure.	Per inhab.
1830 .	£40,000,000	£3	£8,500,000	14s.
1850 .	186,000,000	12	13,500,000	18s.
1868 .	221,000,000	14	21,000,000	27s.
1878 .	550,000,000	33	29,500,000	37s.

The incidence of taxation is 17 per cent of national income, which is much higher than the ratio of Great Britain. Agricultural industry suffers a still heavier tax from the money-lenders, whose charge for interest ranges from 15 to 24 per cent per annum. The province of Murcia is mortgaged up to 65 per cent of its value, although one of the richest in Spain, and it is asserted that 10 per cent of the crops and products are absorbed by the usurers.

Banks are much needed, if only to release the farming classes from the exactions of the money-lenders; but the banking-power of the country is small—at most £16,000,000, or $\frac{1}{8}$ per cent of the capital of the kingdom—a lower ratio even than in Portugal. There are no savings banks, nor does there seem to be any accumulation of wealth or earnings, the people being content to live from hand to mouth. Spain has been aptly described as a country of "six banks and a hundred bull-rings."

According to the three classes of tax-payers in the official returns, the national income seems distributed thus :—

	Number.	Average income.	Amount.
1st class . .	491,000	£120	£59,000,000
2d class . .	1,897,000	50	95,000,000
3d class . .	1,105,000	20	22,000,000
. .	3,493,000	£50	£176,000,000

The returns alluded to only give the numbers of the three classes and the taxes they pay, this being the basis for an estimate such as the above.

SPANISH COLONIES.

THE colonial system of Spain has always been the worst imaginable, apparently on the principle that the colonies are meant as places of punishment.

There is an unmeaning waste of money in keeping up such possessions as Melilla and the Razeef Islands. The first is a fortress on the African coast, where some prisoners are detained; if they were sent to Ceuta, the money thus saved might be devoted to the wants of the Philippine Islands.

As for Razeef, these barren rocks have no fresh water, and a vessel is sent thither at intervals to succour the inhabitants; the latter might be more cheaply provided with board and lodgings at any suitable watering-place, and Razeef could be advantageously obliterated from the list of Spanish possessions. Ceuta alone is of any value or importance among the Spanish settlements in Morocco. Let us turn to consider the real colonies of Spain, viz.—

	Square miles.	Population.
Canaries . .	2,700	284,000
Cuba . . .	48,000	1,025,000
P. Rico . .	3,700	646,000
Philippines . .	88,000	7,500,000

This is all that remains of that empire of Carlos Quinto, "on which the sun never set."

CUBA.

This island, which is much larger than Ireland or the kingdom of Portugal, was for ten years the scene of a disastrous rebellion, finally suppressed in 1878.

Before its outbreak there were 1190 sugar estates, the number being now reduced to 700.

The population has, moreover, declined one-fourth since 1861. The returns show—

	1877.	1861.
Whites . . .	480,000	793,000
Free coloured . .	72,000	232,000
Slaves . . .	372,000	371,000
	1,025,000	1,396,000

The importation of Chinese Coolies began in 1847 and was stopped in 1873, in which period 116,300 coolies were landed at Havana; the actual number of Chinese is barely 50,000, as they were not allowed to bring any women, and they rapidly succumbed to the climate.

It is one of the absurdities of the Spanish Government to put import duties on Cuban sugar, which compels the planters to send it to other countries than Spain.

This industry attained a high degree of prosperity in 1870 to 1873, but the enormous taxation has broken down many planters, and the exports of 1877 and 1878 are 30 per cent less than they were in 1873. The returns of fifty years may be summed up thus :—

1833 exported . . .	90,300 tons
1869-73 ,, average .	660,000 ,,
1874-78 ,, ,, .	580,000 ,,

The value of the sugar-crop is generally £10,000,000 sterling, the United States taking two-thirds. The shipments of tobacco average 7,000,000 lbs. yearly, besides 2,000,000 boxes of cigars, representing a value of £5,000,000. The French Government takes one-fourth of the cigars; the German and Belgian Governments also send large orders. It is worthy of remark that the sugar and tobacco shipped from Cuba are equal in value to all

the exports of Spain. This island, poetically styled the "Pearl of the West Indies," would be the richest and most prosperous colony in the world, but for the recent troubles and the overwhelming taxation.

The taxes average £16,000,000 sterling, or £16 per head of the population. The export duties are very oppressive, viz. £3 per ton on sugar, and £12 per ton on tobacco. So heavy is the income-tax that one planter pays £30,000 a year; some have fled, abandoning their vast estates, machinery, etc., because unable to meet the taxes. Planters have been known to expend up to £1,000,000 sterling in machinery for their mills and in making tramways to the port. Some estates count 1000 or 2000 labourers, Chinamen and negroes, who cost almost alike, say £50 a head per annum.

The custom-houses are mortgaged for war loans amounting to £14,000,000 sterling, and the Government has also emitted £13,000,000 of paper money, which has declined in value as follows:—

1869 . . .	£1 paper	=	19s.
1876-77 . . .	„	=	9s.

In 1878 the Viceroy reduced all salaries (beginning with his own) 50 per cent, but as there are 16,000 Government officials in the island, the machinery of administration is far too dear.

Notwithstanding the extra duties on foreign vessels, more than half the trade is done on foreign bottom, chiefly American and British. The tonnage of vessels cleared from all the ports is over 1,000,000 tons yearly.

The census shows that besides 700 sugar-plantations, there are 4500 "vegas" or tobacco estates, 192 coffee estates, 3200 "potreros" or cattle-farms, and 17,000 small farms or plantations. At one time timber was an article

of export, but owing to the reckless destruction of forest, it is now necessary to import timber from Canada.

The railways mostly belong to English companies, and some of them have given for years 10 to 14 per cent net profits per annum. The central line from Habana to Incaro was made in 1845, three years before the first railway was commenced in Spain.

Habana has six banks, but the only one with right to emit paper money is the Banco de España.

Porto Rico.

This island contains 300,000 whites, 200,000 Creole Mestizos, and 20,000 negroes. Slavery has been recently abolished, but industry has not received such a check as was anticipated. The export taxes operate very prejudicially, being £1 per ton on tobacco and sugar, and 50s. on coffee. Instead of the Government devoting such taxes to the internal necessities of the island, it does nothing in this sense. There are no roads or bridges; if the weather be fine one can travel or horseback, if rainy, the rivers are impassable.

The exports are approximately as follow :—

	Tons.	Value.
Sugar . . .	100,000	£1,450,000
Coffee . . .	15,000	1,040,000
Tobacco . .	5,000	150,000
		£2,640,000

Some of the natives have farms for raising cattle. A few occupy themselves in extracting copper, lead, iron, and other minerals. If the export taxes were abolished, this island would become one of the most prosperous places in the world. The climate and soil are excellent.

Canary Islands.

This is another Spanish colony that makes little progress. The population in 1802 was 194,500, and from that time down to 1835 there was an increase of 40,000 souls. Within the last forty years, however, most of the islands have gone back both in population and industry.

	Area.	Pop. in 1835.	Pop. in 1860.
Teneriffe . .	1060 sq. miles	85,000	93,700
Grand Canary . .	910 „	68,000	69,000
Palma . . .	250 „	33,000	31,000
Other islands . .	588 „	47,600	43,100
	2808 „	233,600	236,800

The decline of population in some islands and stationary character of the rest is the more remarkable as the natural rate of increase is higher than in England, and averages 2 per cent per annum.

Births, per 1000 inhabitants . . .	45
Deaths „ „ . . .	25
Annual increase	20

Thousands emigrate yearly to Cuba and the River Plate, although not one-sixth of the area of the islands is cultivated, nor the fisheries one-quarter developed. Much of the soil is of course utterly barren and worthless, but there is still plenty of land whereon maize could be cultivated, instead of having to import it from Brazil.

In 1852 these islands were made free to the commerce of the globe, except as regards tobacco. So absurd and vexatious, however, were the regulations about quarantine, that the mail steamers had to give up calling at Santa Cruz, and move their coal-station to the Cape Verde Islands. Since then the islands have sensibly decayed.

Cochineal was introduced in 1825, and may be said to have supplied the place of wine as a staple product. From 1865 to 1869 the crop doubled, and in spite of the competition from artificial dyes it holds its ground. The exportation averages 6,000,000 lbs., worth £500,000 sterling.

Tobacco is now cultivated successfully on the sites of many old vineyards. Unfortunately these islands in the present century have suffered from long droughts, owing to the inhabitants having cut down much of the timber. The average of rainy days is thirty-six in the year. At times the droughts cause famines, and the inhabitants are generally in a wretched condition, although climate and soil formerly deserved for these islands the epithet of "The Fortunates." Their temperature never goes below 64° nor above 79° Fahrenheit. The silkworm thrives here, and a small quantity of raw silk is exported.

Although the fisheries are twenty times as productive as those of Newfoundland, and a vessel of 30 tons will often fill up in three or four days, there is no effort made to dry the fish for exportation to Portugal, which country takes 10,000 tons of dried fish yearly from Norway and elsewhere. Crime is so rare that only two murders have been committed in a century. The inhabitants are so weighed down by taxes, land-laws, etc., that they have no spirit to labour, but when they emigrate to Cuba or Brazil, they prove the most industrious of all classes of settlers. They are of domestic habits, the marriage-rate in these islands being 16 per 1000, that is on a par with Great Britain.

The official statistics of twenty years ago reported 450,000 acres tilled, 2,000,000 waste; value of agricultural estates, £13,000,000 sterling; annual crop, £400,000; fisheries, £40,000. An average crop was then supposed

to be 50,000 pipes wine, 20,000 tons grain, 40,000 tons potatoes. At present the crop of cochineal is of more value than all the above products.

The commerce of the islands, imports and exports, is over £1,300,000 sterling, mostly carried on with Great Britain. There are usually 500 vessels arrive annually from all parts, with a gross tonnage of 200,000 tons, besides two lines of steamers from Europe to South America that call at the Canaries.

Philippine Islands.

For two centuries no foreign vessels were allowed by the Spanish Government to trade with these islands.

In 1809 an English firm first obtained permission to open a house at Manila, but the monopoly of the Spanish Philippine Company effectually prevented trade until 1834, when the Company's charter expired. Since that time various English, German, and Swiss houses have been established.

The census of 1858 showed the population to consist of—

Europeans . . .	6,000
Chinese . . .	78,000
Malays . . .	4,206,000
	4,290,000

The Europeans are mostly Spaniards, including the public officials and garrison. The Chinese carry on most of the retail trade, and are subject to an annual tax of £2 a head for permission to reside in the island. The Malays are skilful farmers and navigators, and all the internal industry of the country is in their hands. The Mestizos or half-castes are remarkable for their energy. There are also Negritos or forest aborigines, not included in the census, since they pay no taxes.

There are 10 large and 1000 small islands, with a total area of 134,000 square miles, or 85 million acres, of which only 4,500,000 are cultivated, viz.—

Rice	3,140,000 acres
Sugar	640,000 ,,
Hemp	260,000 ,,
Coffee, maize, tobacco, etc.	410,000 ,,
	4,450,000 ,,

The island of Luzon has 2,670,000 acres under tillage, being two-thirds of the total agriculture of the archipelago. Sugar-exports have doubled in fifteen years, being now 130,000 tons, worth £2,500,000 sterling; for want of proper machinery half the sugar is lost, the yield not exceeding 15 cwt. per acre. There are, meantime, 160 large estates with steam machinery for crushing cane. Rice, being the food of the people, is the chief article of agriculture, and yields one hundred-fold. The first coffee plantation was made in 1836; the production now exceeds 60,000 tons. Hemp is largely cultivated, but has recently declined one-half, the export averaging at present only 500 tons. There are five Government factories at Manila, employing 33,000 cigar-makers, the export of tobacco and cigars reaching £1,000,000 per annum. No country in the world is richer in a variety of woods, but the cost of conveying the timber to a seaport would exceed its value, there being neither bridges, roads, nor canals.

Minerals.—Gold is found in many places, and the quantity annually washed and crushed by the Malays averages 2500 ounces, say £8000 sterling. Lead mixed with silver abounds, as also iron, but neither is worked. Copper is extracted in South Luzon for home use. Coal is also produced, but capital is requisite to work the mines

properly. Sulphur and quicksilver would also repay enterprise.

Commerce.—All the trade of the Philippines passes through Manila, amounting to £7,500,000, of which two-thirds are exports. Docks, quays, roads, and railways are much wanted, but no effort is made in this direction. The canals made by the Jesuits are now choked up, and all internal traffic is in a wretched condition.

PORTUGAL.

In the year 1801 this country had almost the same population as the United States of America. At present it has less than the State of New York. The difference in point of wealth, industry, products, etc., is still more remarkable.

For forty years Portugal remained stagnant, and travellers who visited the country in 1840 found it in almost the same condition as described in the last century. There were no roads, no mail-coaches; persons who disliked riding on mules had to be carried in sedan chairs. There were no inns, and the peasantry were so poor that for want of furniture they sat cross-legged on the floor of their huts. Even the nobles slept on straw stitched in canvas bags. Beans formed a principal article of food, and all classes drank port wine with impunity, gout being (as is still the case) utterly unknown in the bills of mortality. Some of the above features remain, but the Portugal of 1880 is as different from what it was in 1840 as if two centuries had elapsed.

Population.—The tendency for forty years was downwards, owing to emigration to Brazil and other countries, but it has been in late years ascending:—

1802	. . .	3,683,000 inhabitants
1840	. . .	3,224,500 ,,
1870	. . .	3,991,000 ,,

Manufactures.—Some English cotton-mills have recently been started, but there are hardly any native manufactures. The goldsmiths of Oporto make very handsome filigree

work. In 1872 the total number of permanent steam-engines in the kingdom was seventy, representing an aggregate of 1200 horse-power, the factories being as follows:—

	Factories.	Operatives.
Cotton and woollen . . .	115	8,600
Glass, soap, etc.	247	10,500
	362	19,100

Setubal exports 2,000,000 tons of salt, valued at £120,000. A coal-bed near Oporto is worked at intervals. In the last fifteen earthquakes several new veins of copper and silver were discovered, but nobody takes the trouble to work them.

Commerce.—Notwithstanding the admirable position of Lisbon for commerce, Portugal shows hardly any increase as compared with fifty years ago. In fact, the import trade has declined 15 per cent, owing to the vexatious character of the fiscal regulations. Thus dried cod-fish, the staple food of the working-classes, is subject to a duty of £9 per ton, and the Customs tariff has no fewer than forty-nine categories for English cotton goods. The following are the trade returns:—

	Imports.	Exports.	Total.
1820 to 1840 . .	£3,200,000	£2,600,000	£5,800,000 per an.
1871 to 1878 . .	2,700,000	4,500,000	7,200,000 ,,

It is satisfactory to note that exports have increased 73 per cent.

Instruction.—Few countries stand lower in this respect, the proportion of school children to population being 3 per cent, the lowest in Europe except Russia and Turkey. The returns, nevertheless, indicate a favourable progress, showing that the average has doubled since 1861, and quadrupled since 1854. We find similar advance in collateral branches of instruction. According to the census of

1827 there were but sixteen printing-offices in the kingdom, whereas now there are thirty newspapers, including eight at Lisbon. The intellectual activity, as shown by the post-office returns, is 35 per cent lower than in Spain.

Colonies.—Portugal has three valuable possessions in the Atlantic, namely Madeira, the Azores, and the Cape Verdes, but her territories in Africa, India, and China are only a source of expense, and the sooner she can sell them to some other Power the better. Perhaps, as Great Britain expended £19,000,000 in rescuing Portugal from the grasp of Buonaparte, the people of Portugal will some day make us a present of Goa, Mozambique, and Macao.

AGRICULTURE.

The total area of Portugal is held as follows:—

Class.	Number.	Area.	Average farm.
Peasants . .	105,000	550,000 acres	5 acres
Farm owners .	252,000	5,400,000 ,,	22 ,,
Tenants . .	140,000	2,800,000 ,,	20 ,,
Nobles, etc. .	62,000	12,450,000 ,,	252 ,,
	559,000	21,200,000	50 ,,

In 1805 one-half of Portugal was said to be untilled, but in 1825 a much greater proportion was waste. The crops of grain and potatoes were barely sufficient for 60 per cent of the population. Some years the northern provinces produced good crops, but there being no roads southward, and the rivers being unnavigable from the dangerous bars, the imports of foreign grain to Lisbon usually amounted to 6,000,000 bushels. In 1840, for one year, the country raised enough grain for home consumption, but since then there has been an average deficit of 5,000,000 bushels yearly. The mode of agriculture is rude, wooden ploughs being in general use. The soil is not so good as that of

Spain, and the area under tillage less, only one-seventh of Portugal being cultivated, viz.—

	Acres.	Value of crop.
Grain	2,570,000	£5,550,000
Vineyards and gardens .	690,000	11,952,000
Olive groves . . .	130,000	520,000
Woods, mountains, etc. .	19,010,000	...
	22,400,000	£18,022,000

The above is the official valuation, which puts down also a sum of £5,160,000 for pastoral products, making a total of £23,182,000, equal to £1 per acre, for the extent of the kingdom. The grain-crop averages 30 million bushels, say 12 to the acre, the yield varying from six to seven fold. In 1870 the agricultural products were found to be double what they amounted to twenty years before, this being the result of railways. In 1850 the roads were so bad, that an ox-cart, with a pipe of wine, drawn by two oxen, could only travel six miles in a day.

Wines.—The extent under vineyards is 474,000 acres, which produce 132 million gallons of wine, valued at £8,000,000 sterling. The export comprises 80,000 pipes of red and 60,000 white, the latter chiefly Lisbon. The trade of port wine is in English hands, the bulk being shipped to Great Britain. Some German houses in Oporto also ship largely to Brazil. The exportation from Oporto has increased 50 per cent in ten years, viz.—

1863-67 . . .	37,500 pipes per annum
1875-78 . . .	55,200 „ „

Great Britain usually takes five-sixths of the port wine, notwithstanding the heavy duties charged on it in England.

The valley of the Minho is called the "Garden of Portugal," being mostly of spade cultivation. Estate-owners cut up their properties into farms of 13 acres, which are

let to tenants at 5s. an acre. Most of these farms have patches of maize, cabbage, and vines, and the result is as follows:—

Value of crops	£80
Rent	£3
Seed and wages	37
Balance	£40

This balance affords a decent support for the farmer and his family, who live on frugal fare; salt-fish for breakfast, and pork and beans, with a little port wine, for dinner. Meantime, peasants who own patches of 5 acres are the most pitiable class in the world. Their food averages but 34 "grammes" of nitrogenous substance daily, or one-third of what is requisite for the proper support of a full-grown man. They eat meat only four times a year. A portion of their little income goes to greedy money-lenders; while the tax-collector takes the rest.

Summing up all the grain-crops we find a total of 30 million bushels, the yield of wheat being only 9 bushels to the acre, viz.—

	Acres.	Bushels.
Wheat . .	620,000	5,450,000
Rye . . .	1,000,000	6,600,000
Maize . .	750,000	15,200,000
Barley . .	160,000	2,050,000
Oats and rice .	40,000	900,000
	2,570,000	30,200,000

Cattle.—In the valleys of the Douro and Minho are raised some fine breeds of horned cattle. For the last two years an annual average of 16,000 head has been shipped to England from Oporto. The sheep of Portugal are inferior to the Spanish, the farmers caring little to im-

prove the breed. About 1,000,000 lbs. wool are annually shipped to England, the rest is kept for rough home-spun fabrics.

The returns of farm-stock are as follow:—

	Number.	Value.
Horses . . .	70,000	£1,050,000
Cows . . .	523,000	5,230,000
Sheep . . .	2,417,000	2,417,000
Pigs . . .	858,000	1,716,000
		£10,413,000

The official valuation is only £6,670,000, but it appears a low estimate. Taking the above valuation of £10,000,000, it is equivalent to 50s. per inhabitant, which shows that in this respect Portugal is one of the poorest countries in Europe. Most of the swine are raised in the province of Algarve, where they are fattened on acorns. Alemtejo offers the best pastures in the south, having a rich soil; the whole province consists of large grazing farms.

According to the latest official returns, the annual income of the nation from rural pursuits was as follows:—

Agricultural products . .	£18,022,000
Pastoral „ . .	5,160,000
	£23,182,000

This is only equal to £1 per acre for the whole extent of Portugal, against £3 per acre for United Kingdom.

WEALTH OF PORTUGAL.

In the eighteenth century Portugal received from her colony of Brazil more than £150,000,000 sterling in precious metals;[1] to-day she is one of the poorest countries

[1] Total for one hundred and thirteen years, from 1690 to 1803, was £171,000,000.

in Europe—an eloquent proof of Adam Smith's theory that there is no real wealth except what springs from industry. Not that the Portuguese are so indolent as is generally supposed, for thousands of them migrate yearly to Brazil and other countries, returning after a few years with a store of money; but the economy of the kingdom is out of joint, and its resources are not half developed. The capital and income of the nation are at present as follow:—

	Capital.	Income.	Ratio.
Agricultural . . .	£160,000,000	£23,000,000	14½ per cent
General and commercial	72,000,000	9,000,000	12½ ,,
	£232,000,000	£32,000,000	14 ,,

The embarrassed condition of the landed proprietors has been a mill-stone on the neck of Portugal, and of late some effort to effect a remedy has proved partly successful. In 1863 the law of entail was abolished, whereupon encumbered estates were brought to the hammer to the value of £3,000,000 sterling.[1] It is further proposed to make compulsory the sale of bankrupt estates, on which the existing mortgages already amount to £10,000,000, and if this be carried out there will be a notable advance in agriculture, which constitutes the great wealth of the country. How much the agricultural industry is borne down by the charges of interest is shown in a Table of rural mortgages published in 1861, viz.—

Lenders.	Amount.	Interest.
Usurers	£6,250,000	15 to 20 per cent
Religious communities .	1,600,000	5 ,,
	£7,850,000	14 ,,

[1] One estate in Alemtejo, with a rent-roll of £3000, fetched £80,000, which gives a fair idea of the value of landed property.

In 1866 the Credito Portuguez mortgage bank was founded, to lend money at 6 per cent and rescue the land-owners from the excessive rates of the usurers. The bank emitted, in three years down to 1869, an amount of £1,100,000 in debentures on 1630 estates, two-thirds of this sum being taken up by distressed noblemen, averaging £3500 each. Some more of these banks are needed to multiply the good effects already made evident. The banking power of Portugal is relatively much greater than that of Spain, and amounts to £10,000,000 sterling, or 4½ per cent of the capital of the kingdom. There are no savings banks, but the deposits in the ordinary banks reach £3,500,000 besides £6,000,000 capital, so that it would appear there is a certain annual accumulation of wealth in spite of the heavy burthen of debt and taxation.

The growth of debt and expenditure in fifty years has been—

	Debt.	Expenditure.
1825 . . .	£2 per head	14s.
1840 . . .	5 ,,	15s.
1878 . . .	22 ,,	27s.

The proportion of debt is four times that of Great Britain, say 36 per cent on the capital of the kingdom. The incidence of taxation is, however, not quite double what it is in the United Kingdom, being over 21 per cent of the national income, including local taxes. Portugal shows the same rate of income per inhabitant, namely £8, as in Italy, but the net income, after paying taxes, is £1 per head higher.

SWITZERLAND.

THIRTY years ago Switzerland derived its principal riches from the exportation of watches, horned cattle, and butter, but the returns for 1876 and 1877 show that the importation of cattle and butter was greater than the quantities exported. At present the sublime scenery is a great source of profitable income, every year on the increase. The Swiss papers give the following estimate for visitors:—

	Number.	Sum spent.	Per head.
Americans . .	210,000	£1,680,000	£8
Germans . .	350,000	700,000	2
Russians . . .	160,000	1,600,000	10
English, etc. . .	227,500	1,820,000	8
	947,500	£5,800,000	£6

Switzerland wears a look of general prosperity, the chalets surrounded by the little farms having the most picturesque effect. But the country is sadly impoverished, first by the subdivision of property, secondly by the American competition in clock-making. So late as 1873 Switzerland had 40,000 watchmakers constantly at work, who exported 1,300,000 watches yearly, worth £2,500,000 sterling. Since then the Americans have invented machinery for making watches by steam-power, producing them much cheaper, and ruining the staple industry of Switzerland. As the country abounds in water-power, the Swiss have established numerous cotton-mills, which they work so cheaply as to undersell the cotton fabrics of Great Britain, the wages being also very low.

Thrifty and industrious as are the inhabitants, with

every available inch of ground cultivated, they are unable to raise enough grain for their support. Every year they import 12,000,000 bushels, three-fourths wheat, at a cost of £2,000,000 sterling. The farms are usually about 12 acres; farm-labourers earn from 1s. to 1s. 6d. per day. Land-mortgages represent about one-fourth of the total value. The exportation of cattle and cheese has fallen away completely, but the farmers still send 90,000 cows yearly to the fat plains of Lombardy to produce the cheese vulgarly known as Parmegiano. Agriculture is not very advanced in Switzerland, the farmers still threshing grain by hand. So careful are the people of their earnings that the savings banks are full of money, although the inhabitants live so sparingly that they eat meat only on Sundays. Berne is the richest canton, with a population of 500,000; of these there are 23,000 who pay income-tax on an average of £32 per annum. Public instruction is so well diffused that all the adults can read and write. Every canton is full of free libraries, where the working-classes spend their evenings.

Switzerland has 1550 miles of railway, which earned last year £3,380,000, say £2200 per mile. The various public debts amount in the aggregate to an average of £1 per inhabitant.

GREECE.

THIS little kingdom has doubled its population since 1838. The Greeks are often accused of indolence, and it is certain that notwithstanding the richness of the soil the inhabitants do not raise enough grain for six months' consumption. Perhaps this is because they have a taste for

nautical pursuits, their merchant shipping, compared to population, being larger than in Great Britain.

The balance of trade for the last ten years has been against Greece :—

Imports (1868-1877)	£41,000,000
Exports „ „	28,000,000
Surplus imports	£13,000,000

The gross trade of 1877 was £8,500,000, or 50 per cent over the returns for 1867.

The arrivals consist as follow :—

	Number.	Tons.
Greek vessels . . .	63,465	2,211,000
Foreign	11,089	1,783,000
	74,554	3,994,000

This is an enormous traffic for so small a country, and the merchant fleet carrying the Greek flag is also remarkable. There are 5440 vessels, of 262,000 tons burthen, manned by 26,800 skilful seamen.

The revenue is low, and the public debt very high, but the latter has been for some years in abeyance.

	Amount.	Per head.
Revenue . .	£1,400,000	17s.
Debt . . .	17,150,000	£10

Education is backward. School-children are as 4 per cent of the population, and only 20 per cent of the adults can read or write.

With such advantages of soil and climate Greece ought to produce ten times as much as at present.

The backward condition of the country is usually ascribed to brigands, but is perhaps more due to want of highroads. Crown lands cover 5,000,000 acres, which might be rendered productive if distributed as homestead

grants among agricultural families. At present only $\frac{1}{7}$ of the kingdom is under tillage.

	Acres.
Cultivated lands . . .	1,920,000
Rich, but uncultivated .	3,032,000
Mountains	4,820,000
Woods . . .	1,410,000
Lakes, rivers, etc. . .	608,000
	11,790,000

The cultivated lands are in the hands of 147,000 agricultural families, say thirteen acres to each family. The rest of the country is held as follows:—

	Acres.
Crown lands . . .	5,400,000
16,000 nobles . . .	3,860,000
	9,260,000

The mountain and tilled lands afford pasture to 4,000,000 sheep and goats, tended by 59,000 pastoral families. So primitive is the system of agriculture, that grain is threshed by driving horses over it. Wages are comparatively high—£6 a year for indoor servants, and 1s. 6d. per day for ordinary labourers, in both cases with food. This ordinarily consists of wine, bread, olives, and onions, with meat once a month. Wine is good and cheap, only fourpence a quart. The best land sometimes rents as high as £1 per acre, but farming is far from profitable. Although Athens is but twenty-five miles from Marathon, the freight on a ton of grain is £6, so that the citizens find it cheaper to get their supply from the Black Sea. The Government also collects one-tenth of all crops for the revenue, which falls heavily on the farmer.

The farming-stock comprises 58,000 cows, 162,000 horses and asses, and 4,000,000 sheep and goats, representing a total value of £4,500,000 sterling.

OTTOMAN EMPIRE.

THIS part of the world has made rapid progress in debt and dissolution. Sixty years ago, when Mahmoud II. succeeded to the throne, his dominions extended over a great portion of Europe, Asia, and Africa. In 1811 he lost Egypt; in 1828 Russia stripped him of some provinces, and since that time the Sublime Porte has been on the road to ruin. The Turkish Empire, by a diplomatic figure of speech, is still supposed to comprise provinces that are virtually independent, such as Bulgaria, Eastern Roumelia, Arabia, Egypt, and Tunis, but the actual dominions subject to Abdul Hamet are only the shadow of a monarchy. The latest estimates of population are as follow:—

	Greeks, Copts, etc.	Turks and Arabs.	Total.
European provinces .	4,470,000	2,415,000	6,885,000
Asia Minor and Arabia .	2,647,000	13,068,000	15,715,000
Egypt	1,125,000	15,800,000	16,925,000
Tunis	72,000	2,028,000	2,100,000

The trade of the empire amounts to £50,000,000, exports and imports being almost even.[1] Egypt stands for one-third. Grain and cotton are the principal exports, the former representing a value of £15,000,000, coming chiefly from the Danubian territories. Railways have been constructed as follows:—

Turkey proper . . .	786 miles
Bulgaria	140 ,,
Asia Minor . . .	172 ,,
Egypt	1102 ,,
Tunis	45 ,,
	2245 ,,

[1] The first English merchant opened a house of business at Constantinople in 1812, and soon found a large portion of the commerce pass through his hands.

It is proposed by an English company to make the Euphrates Valley railway, from Alexandretta on the Mediterranean to Busreh on the Persian Gulf, and thus shorten the route to India very considerably, viz.—

	Days.
Alexandretta to Busreh by rail . . .	3
Busreh to Kurrachee (India) by steamer .	6
	9

The railway would be 850 miles long, the cost being estimated at £7,300,000, but there is another project to trace the line from Alexandretta to Bagdad, and connect the latter city with Busreh by steam navigation on the Tigris. The second line would be 250 miles shorter than the first, and cost only £5,000,000, the country being a dead level. At present the largest steamer on the Tigris is the *Blosse Lynch*, 100 tons, carrying the Ottoman flag, nó other being allowed.

Far more important than the railways is the Suez Canal, constructed by M. Lesseps in thirteen years, and opened in 1869: length 92 miles, depth 26 feet.

The traffic from the first year of working is shown by the following figures:—

Date.	Ships.	Tonnage.	Fees.
1870 .	486	435,911	£206,400
1871 .	765	761,467	359,500
1872 .	1082	1,439,169	656,000
1873 .	1173	2,085,270	916,000
1874 .	1264	2,500,000	994,000
1875 .	1494	2,940,000	1,156,000
1876 .	1457	3,072,107	1,199,000
1877 .	1663	3,418,949	1,311,000
1878 .	1593	3,291,535	1,244,000

Of the total tonnage for last year no less than 2,630,258, or 80 per cent, were represented by British

vessels. Steamers make the passage in thirty hours, but tugs[1] with sailing vessels take forty-four hours: the former pay 8s. per ton, say £800 each. Sometimes twenty-five vessels pass through the canal in one day: two cannot pass abreast unless in the sidings. In 1876 the British Government purchased one-fifth of the shares of the canal, at 12½ per cent premium, paying £3,977,000 for 176,602 shares, with the coupons cut off till 1895, the Khedive promising to pay the coupons himself. The total capital expended on the Canal is £17,026,000, and the earnings give a dividend of 3 per cent.

The revenues and debt of Turkey and Egypt are distinct, and estimated as follows:—

	Turkey.	Egypt.	Total.
Revenue .	£20,000,000	£9,000,000	£29,000,000
Debt . .	260,000,000	92,000,000	352,000,000

Although Egypt is practically independent, the Khedive has to pay a tribute of £720,000 per annum to the Sublime Porte. Tunis also pays a small tribute, being in all respects on a footing similar to Egypt.

OTTOMAN AGRICULTURE.

Every province has its distinct features and modes of agriculture. Some are held in small farms, averaging 20 acres, or as much as a man can cultivate with a pair of oxen. Others are mostly in the hands of Murabas or "Metayers;" but mostly all are exceedingly backward, owing to the want of machinery and the oppression of the tax-gatherers and money-lenders.

Epirus and Thessaly offer the same appearance as in the

[1] The usual charge for tugs is £200 from sea to sea.

days of Alexander the Great, except that the women now work harder in the fields. A vast portion of fertile land is uncultivated, either for want of population, or due to the lazy habits of the men. Indoor servants receive £5 a year and shoes; outdoor only 9d. a day.

Bulgaria is more advanced; for in 1874 there were already forty reaping and threshing machines. The adjacent territory of Roumania is also progressing, especially since the emancipation of the serfs in 1864. The Roumanian Government paid the nobles £2 per acre in 10 per cent funds, and handed over the lands to the peasants, obliging the latter to pay 2s. per acre for sixteen years to redeem their lands.

Adrianople is the centre of a rich farming country, the most progressive of all the Ottoman territory. Steam-threshers are used, and the wages of farm-servants are very high—£10 a year for indoor, and 1s. a day for outdoor. The land-tenure may be described thus:—

70 per cent in 50-acre farms.
30 „ rented to tenants.

The proprietor of 50 acres has patches of wheat and maize, ploughing 4 inches deep, with oxen or buffaloes, and his farm-stock comprises 20 sheep, a cow, a horse, pigs, goats, and poultry. His family aid him in his labours, and if a suitor presents himself for one of his daughters, a commutation-fee is arranged for the loss of the maiden's services. The value of land for purchasing or renting is as follows:—

	Purchase.	Rent.
1st Class . .	£85 per acre	60s. per annum
2d „ . .	50 „	40s. „
3d „ . .	20 „	15s. „

Waste land varies from £3 to £6 per acre. Until

recently the farmers were plundered by usurers, who charged 18 per cent; but now the National Loan Society makes them advances at 8 per cent per annum, and has enabled them to pay off their old debts.

Bessarabia (now ceded to Russia) is a country of extreme fertility in corn and wine. The vineyards produce about £18 per acre; the grain-farms yield, without manure, an average of 60 bushels maize per acre. In 1870 the serfs were emancipated, the Boyars or nobles being compelled either to sell to each peasant his holding at 26s. per acre, or to give him the moiety gratis. Four hundred Boyars preferred the latter, as the land easily gives 45s. per acre annual profit. The obligations of the serfs before their emancipation were as follow:—

1st. To work 12 days in the year for the Boyar.

2d. To give him one-tenth of the crops.

3d. To buy groceries at the Boyar's shop.

The emancipation at once converted 350,000 male Bessarabian serfs into proprietors of farms, averaging 30 acres each. Some of the Boyars rent out their own lands to tenants at 5s. per acre. The cost of tillage is 12s. per acre, and the maize crop is usually sold on the spot at 75s., leaving the tenant a net profit of 58s. per acre. The jobbers who buy the maize at 1s. 3d. per bushel have to pay 100 per cent for freight to Odessa, where they sell it for 3s., thus making a profit of 6d. per bushel.

Asia Minor (not including Arabia) has an area of 304,000,000 acres, as follows:—

Forest and common .	102,000,000	acres
Unreclaimed lands .	152,000,000	„
Arable lands . . .	50,000,000	„
	304,000,000	„

The cultivated lands are mostly held, either by owners or tenants, in farms of 20 acres, viz.—

Class.	Number.	Area.	Average farm.
Proprietors . .	651,000	15,000,000 acres	23 acres
Murabás . .	1,395,000	28,000,000 ,,	20 ,,
Cottiers . . .	633,000	7,000,000 ,,	11 ,,
	2,679,000	50,000,000 ,,	19 ,,

The Murabás are identical with the Metayers of France and Italy, or the Medianeros of Spain, the landlord getting half the crops. The mode of agriculture is rude; the habits of the people are simple. A family of five persons rarely spends as much as £10 a year; but the farmers are bled by money-lenders, at the rate of 24 per cent per annum. The want of roads is such that the freight of a ton of corn would be about £9 for 100 miles.

Egypt consists mostly of Crown lands. There are altogether 5,000,000 acres under crops, of which the Khedive owns 3,800,000, which he rents to the Fellahs at 8s. per acre in Upper Egypt, or 30s. in the Nile valley. Egypt is the third great cotton-field of the world, producing nearly one-twentieth of the whole crop. There is still room for great development of agriculture, there being 2,250,000 acres of arable land at present idle.

THE EAST.

COMMERCE and civilisation have made great progress in the last thirty years among Eastern nations. This is more especially true of Japan and China, countries closed for centuries against European intercourse. One by one the most conservative Oriental States are coming into the great

family of nations, and contributing to the welfare and happiness of mankind by an interchange of products.

It is to be regretted that statistical science is utterly neglected, except in Japan, and hence we are deprived of the only safe measure of public progress. The Mikado, however, is setting an example in this respect which may ultimately provoke imitation among the other Eastern potentates.

JAPAN.

THE "Empire of the Rising Sun" is about twice the size of Great Britain, and has the same population as the United Kingdom. Commodore Perry, U.S.N., opened the country to foreign commerce in 1854. A complete reformation ensued after the fall of the Tycoon in 1868, since which time railways, national banks, newspapers, free schools, police, gas, and other improvements have sprung up. The Mikado's power seems now consolidated, the Satsuma rebellion having been suppressed in 1878 after it had cost the Government an outlay of £8,500,000 sterling, and the lives of 13,000 soldiers.

Rice, being the chief food of the people, is the principal branch of agriculture. The official report shows that the yield per acre is less than in Lombardy. Little more than one-tenth of Japan is cultivated, most of the country being held in large estates by 266 Daimios, whose incomes range from £15,000 to £900,000 per annum. The agricultural returns show as follow:—

	Acres.	Crop.
Rice	6,790,000	136,000,000 bushels
Grain, vegetables, etc. .	4,110,000	...
Pasture	94,600,000	...
	105,500,000	....

The rice crop is usually more than enough for home consumption, which is estimated as follows :—

Upper classes . . .	10 lbs.	weekly
Children	5 ,,	,,
Lower classes . . .	3 ,,	,,

This gives an average of three bushels per inhabitant, and the ordinary price is 3s. per bushel. Besides what is eaten there is a large quantity used for making beer, and some is exported. The usual consumption is as follows :—

Food	96,000,000	bushels
Sâké-beer . . .	15,000,000	,,
Confectionery . . .	6,000,000	,,
Exportation . . .	9,000,000	,,
Total	136,000,000	,,

The production of sâké is about 144 million gallons, the consumption averaging 4½ gallons per inhabitant.

Japan is contrary to Europe in so many things that it is not surprising to find there are 3 per cent more males than females. The returns show a total of 33,997,000 inhabitants.

As soon as the railways are completed that are now in construction there will be over 200 miles, but the actual length working is only 66 miles. Telegraph wires extend for 1840 miles, and Nagasaki is connected with Europe by cable. Commerce is estimated at £8,000,000, imports and exports being equal.

In 1878 the revenue was £10,500,000, an increase of 4 per cent on the previous year. The expenditure included £20,000 for the National Museum, and various subsidies to schools.

Public debt and paper money have increased in recent years, partly owing to public improvements, partly to the Satsuma rebellion.

	Debt.	Paper money.	Total debt.
1876 . . .	£9,000,000	£19,000,000	£28,000,000
1878 . . .	46,500,000	28,500,000	75,000,000

The debt includes a new loan emitted last year for £2,500,000, for railways, mines, bridges, and reclaiming waste lands. The paper money consists of £24,000,000 in Government notes and £4,500,000 emitted by the banks. There are no fewer than 133 national banks, in all the principal towns and seaports. Currency is now at 13 per cent discount, the paper dollar being worth only 87 "sen" silver, say, 3s. 8d. English. The Mikado introduced penny postage in 1871, and the mails carry annually 29 million letters and 7½ million newspapers. The *Japan Mail* and the *Hiogo Times* are published in English, which is the polite language of the empire; but the journals of largest circulation are in Japanese (see page 92). English is taught in the State schools, of which there are 22,000, attended by 1,800,000 pupils, a ratio of 6 per cent to the population, about the same as in Italy. Japan also maintains 700 students in colleges in the United States, besides a number studying in Europe.

CHINA.

THE Flowery Land is so thickly populated that terrific famines are become periodical, but as the Brazilian Government is now endeavouring to promote a current of Coolie emigration to the Amazon valley, there will be thus a suitable outlet for millions of Chinamen, Brazil having double the extent of China, with only three inhabitants to the square mile.

China was opened to foreign trade in 1842, when Hong-

kong was ceded to Great Britain. At present there are twenty-four ports licensed to have commerce with strangers, and the trade returns for 1878 show as follows:—

	Taels.	Sterling.
Imports . . .	76,000,000	£22,800,000
Exports . . .	67,500,000	20,250,000

Two-thirds of the exports go to England, tea sometimes reaching the figure of £10,000,000.

Silk is another staple product, this industry being 3000 years old. The shipments to foreign countries average 6,500,000 lbs. yearly. The balance of trade for ten years shows as follows:—

	1869-78.
Imports of ten years . . .	£195,000,000
Exports ,, ,, . . .	208,000,000
Balance for China . . .	£13,000,000

In 1820 the revenue was said to be £50,000,000 sterling, but at present it is hardly half that sum, say 15d. per head. The public debt is little over one penny per inhabitant. Railways were introduced in 1876, when the Shanghai line was opened; but the Government purchased the line, and then pulled up the rails. Canals, in a measure, supply the place of railways, the Imperial Canal, 1200 miles long, affording a convenient highway for 11,000 flat-boats carrying grain. There are 400 canals of less note, all invaluable not merely for conveyance of merchandise, but also for irrigation. High roads, to the number of 20,000, traverse all parts of the empire. Coal is found in eighteen provinces, but the amount raised does not exceed 3,000,000 tons per annum. The Chinese are industrious, orderly, and thrifty. Those who emigrate to Cuba and Peru are often ill-treated, which is the reason that the British colonies of Mauritius, Queensland, Trinidad, and Guiana are preferred by the Coolies.

PERSIA.

THE Shah's empire is dwindling away as fast as the Sultan's. Sixty years ago it was supposed to count 10,000,000 subjects, but at present the "King of kings" rules a smaller population than the King of Portugal. Great part of the country is a wilderness, thinly inhabited by Kurds, Arabs, etc., while the Persians of blue-blood hardly reach 1,000,000 souls.

Ghilan is the most interesting part of the empire, being the centre of the silk industry. The export of this staple was formerly worth £1,000,000 sterling, and is now just one-tenth, say 210,000 lbs., valued at 10s. per lb. The highlanders, or Khal-Kahls, come down every winter to till the lowlands at 6d. a day, and return to their caves as soon as winter is over, with £1 each of their savings.

Agriculture is carried on generally as in Italy, on the "Metayer" system; the landlord receiving one-third of the silk and rice, as well as the first-fruits, and paying all the taxes. The share that falls to the tenant varies from £5 in bad years to £9 in good seasons, or three times as much as the average in British India. Rice, the principal food, is cheap and abundant; meat is worth about 2d. per lb.

Imports are usually in excess of exports, the total commerce being about £4,000,000. The revenue averages 9s. per inhabitant. There are 2500 miles of telegraph, but no railways.

Public instruction is carefully attended to. In all the towns and villages every male and female child is taught to read and copy passages from the Koran, and from the poems of Hafiz and Ferdoussi.

SARAWAK.

RAJAH BROOKE'S dominions, in the island of Borneo, comprise an area of 25,000 square miles, protected by a chain of fourteen forts from the tribes of the interior, and by a fleet of three war-steamers against Malay pirates. The Dyak militia number 25,000 natives, under English officers. The total commerce is £350,000 per annum, sago and quicksilver being the chief exports. Revenue £40,000 a year.

SOUTH AMERICA.

THE War of Independence, which began at Venezuela in April 1810, resulted, after fourteen years, in the final overthrow of the Spanish arms at Ayacucho; the Portuguese having been two years previously expelled from Brazil. Thus the States of South America are little more than half a century old, and yet they have made considerable progress, especially in the last twenty years :—

	1858.	1877.	Increase.
Population	23,500,000	25,700,000	10 per cent
Commerce	£68,400,000	£91,300,000	34 „
Railways	245 miles	4,877 miles	20-fold
Telegraphs	320 „	19,600 „	60-fold
Revenue	£12,430,000	£33,270,000	170 per cent
Debt	£85,890,000	£206,400,000	140 „

Some States have advanced much more than others, the Argentine Republic, Chile, and Brazil having left the others far behind.

The statistics for 1877, as far as can be ascertained, show as follows :—

	Brazil.	Argentine Republic:	Chile:	Peru.	All S. America:[1]
Population	9,858,000	2,150,000	2,270,000	2,670,000	25,700,000
Commerce	£35,500,000	£17,400,000	£11,200,000	£10,300,000	£91,300,000
Revenue	£11,200,000	£2,750,000	£2,900,000	£5,000,000	£33,270,000
Debt	£74,800,000	£18,300,000	£11,100,000	£43,000,000	£206,400,000
Railways	1250 miles	1360 miles	980 miles	1200 miles	4,897 miles
Telegraph	5800 ,,	6500 ,,	2500 ,,	2500 ,,	19,600 ,,

It may be observed that the States which have most progressed are those mostly in contact with Great Britain. English gold has fertilised the plains, opened up the rivers, and developed the resources of South America, the amount of capital invested being as follows :—

	Loans.	Railways.	Banks, etc.	Total.
Brazil	£19,214,000	£6,650,000	£5,475,000	£31,289,000
Peru	31,840,000	2,100,000	1,990,000	35,930,000
Chile	7,550,000	840,000	3,754,000	12,144,000
Argentine Republic	12,970,000	6,610,000	6,140,000	25,720,000
Uruguay	3,209,000	2,000,000	2,431,000	7,640,000
Paraguay	2,915,000	...	...	2,915,000
Bolivia	1,666,000	...	...	1,666,000
Venezuela	6,691,000	...	400,000	7,091,000
New Grenada	2,017,000	...	400,000	2,417,000
Ecuador	1,824,000	...	400,000	2,224,000
	£89,896,000	£18,200,000	£20,940,000	£129,036,000

The above totals give interest as follows :—

	Amount:	Interest:
Bankrupt loans	£47,600,000	Nil.
Good loans	42,296,000	£2,200,000
Railways	18,200,000	1,100,000
Banks	3,950,000	200,000
Sundries	16,990,000	1,910,000
	£129,036,000	£5,410,000

[1] The various items belonging to the minor republics of Venezuela, New Grenada, Ecuador, Bolivia, Paraguay, and Uruguay, are included in this summary, and will be found set out in detail hereafter in the respective countries.

Deducting the money lost in bad loans, it appears the other investments produce 7 per cent. The number of English settlers is 46,000; the amount of English capital being, therefore, as £2900 for each British subject in the continent.

The balance of trade since 1868 has been as follows:—

	1868-1878.
Imports of ten years . . .	£505,000,000
Exports ,, ,, . . .	549,000,000
Surplus exports . . .	£44,000,000

This shows an average of £4,400,000 per annum in favour of South America, more than one-third falling to the share of Brazil.

About £75,000,000 have been expended in the construction of railways, say £15,000 per mile, the average net earnings being 3¼ per cent. These 5000 miles of railway and 20,000 miles of telegraph account for a portion of the public debt, the latter amounting to £206,000,000, or £8 per head of the population. The revenue is £33,000,000, or 27s. per head, while the value of exports is 44s. per head; judged by this standard, the people are taxed twice as heavily as in Great Britain, where the exports are three times the amount of the national revenue.

BRAZIL.

THIS empire comprises twenty provinces, each of which is the size of an ordinary kingdom. The largest are Amazonas and Matto Grosso, together 2,000,000 square miles. The law for gradual abolition of slavery was passed in 1870, the actual number of slaves being under 1,000,000, and it is computed that there will be none by the close of the

century. In the meantime, efforts are on foot for the introduction of Coolies, as none but the southern provinces are suitable for European settlers. There are 90,000 German colonists in the Provinces of Rio Grande do Sul, Paranà, Santa Catarina, and San Paulo, who are tolerably prosperous, forming 36 agricultural colonies.

The soil is so fertile that agriculture gives very abundant returns; maize 300-fold, rice 900-fold, wheat 50-fold. An acre of cotton gives four times the average of the United States, or nearly a ton of unjinned fibre, while coffee and sugar bring as much wealth to Brazil as if each plantation were a gold-field. Sugar can only be cultivated by negroes, but the other products are suitable for German or other European industry. The area and products corresponding to the labour of an able-bodied man are as follow:—

	Area.	Crop.	Value.	Observations.
Coffee . .	5 acres	1½ ton	£60	2000 coffee-plants
Sugar . .	5 ,,	6 ,,	90	Negro's share, £30
Cotton .	7 ,,	6 ,,	80	14,000 cotton-plants
Mandioca .	4 ,,	8 ,,	90	made into Tapioca

More than 80 per cent of the male adult population is engaged in agriculture, say 1,200,000 persons, of whom five-sixths are slaves. The product of their labour averages £30,000,000 sterling, say £25 per head. One-third of the crops is kept for consumption, and two-thirds are exported.

	Average per annum (1869-1874.)		
Exports.	Tons.	Value.	Per ton.
Coffee . . .	165,100	£10,190,000	£60
Cotton . . .	54,400	2,720,000	50
Sugar . . .	153,300	2,680,000	17
Tobacco . . .	14,980	750,000	50
Yerba-tea . . .	15,700	410,000	25
Indiarubber . .	5,600	1,150,000	200
Hides . . .	27,900	1,410,000	...
Sundries . . .	...	1,000,000	...
		£20,310,000	

Brazil is at present the first coffee-growing country in the world, the production having trebled in thirty years. The various plantations cover a total area of 1,400,000 acres, comprising 540 million coffee-plants, which give about a pound of coffee each, say, 240,000 tons annually. This branch of agriculture occupies 300,000 hands, the value of the crop being close on £15,000,000 sterling.

Cotton reached its maximum in 1874, and has since declined. The plantations cover 70,000 acres, employing over 50,000 hands, and the crop averaging £1,200,000 in value. Most of it is exported to Europe, only a small quantity being kept for the local mills at Bahia and Paranahyba.

Sugar-fields have an area of 260,000 acres, yielding a crop of 300,000 tons, of which one-half is used at home, the other exported; the total value of the crop being £5,000,000. It employs about 90,000 hands, exclusively negroes. The quantity exported has doubled in fifteen years.[1]

Tobacco is another great staple, producing about 30,000 tons, worth £1,500,000 sterling. The exportation rose from 4600 tons in 1861 to 15,000 tons in 1874. Yerba or Paraguayan tea is so largely cultivated in the southern provinces, that the shipments have increased 120 per cent in fifteen years.

The import trade has increased *pari passu* with the exports, the latter, however, always showing a balance in favour of the country.

	1867-1876.
Imports of ten years . .	£175,600,000
Exports ,, ,, . .	193,300,000
Surplus exports . .	£17,700,000

[1] The Brazilian guide-book for the Philadelphian Exhibition gives 2½ tons sugar per acre. This must be exceptional, as the average is only 1¼ ton.

The official summary of trade for forty years gives the aggregate of imports and exports thus, per annum:—

1836-41	£9,992,000
1856-61	26,630,000
1867-75	37,980,000

Great Britain is the chief customer, standing for 28 per cent of the total; but in exports singly the United States is ahead of all, as that country takes two-thirds of the coffee.

Public debt is made up of £20,000,000 due to England, and £55,000,000 home debt, in all £75,000,000; this includes £25,000,000 in paper money and treasury-bills. The debt has been caused by an expenditure of £39,000,000 in the Paraguayan war, £9,000,000 on railways, and the rest in various ways. The several provinces have also local debts, making an aggregate of £3,000,000. The total debt averages £8 per inhabitant, and the revenue £1 sterling.

There are 33 banks, of which only three have the right of emission, namely the Banks of Brazil, of Bahia, and of Maranham. The Bank of Brazil has a paid-up capital of £3,630,000, in shares usually at 15 per cent above par. The emission is £3,000,000, and the bank is obliged to lend always £2,600,000 to planters. The dividend averages 8 per cent per annum; reserve fund £440,000. The charter will expire in 1900.

The Bank of Bahia emits only £150,000 of paper money, its paid-up capital being £440,000. The Maranham Bank, capital £110,000, has yet a smaller emission. Among the other banks are the English Bank of Rio and the New London and Brazilian. The aggregate paid-up capital and reserve of all thirty-three banks is £11,270,000, say £350,000 each.

Brazil has 1250 miles of railway, the principal lines being as follow:—

	Miles open.	In construction.
Pedro Segundo	320	132
Santos, San Paulo, etc. . .	260	190
Cantagallo	92	...
Bahia	78	...
Pernambuco	76	...
Eleven other lines . . .	424	1208
	1250	1530

The Pedro Segundo belongs to Government, having already cost £7,300,000, or £24,000 per mile; it has sixteen tunnels and many fine viaducts; the earnings average £890,000 per annum, and the net profits 6½ per cent on the capital. The traffic consists of 1,250,000 passengers and 220,000 tons of merchandise, chiefly coffee. This line is now connected at Cachoeira with the San Paulo system. The Santos line, made by an English company, cost nearly £3,000,000, and pays dividends of 10 or 12 per cent per annum.

There are various mining companies, but the most successful is that of San Juan del Rey, the annual output being 70,000 ounces of gold-dust, worth £220,000. The average dividends for the last thirty-three years have been 23 per cent per annum; shares usually sell at four times their nominal value.

Education is advancing in a satisfactory manner; number of State schools 5890, attended by 191,200 children, say 2 per cent of the population; annual subsidy £575,000, say £3 per scholar, or 14 pence per inhabitant. There are four universities that confer degrees, and twenty-six colleges for special studies. Among the literary societies the foremost is the Instituto Historico, of which the Emperor Dom Pedro is chairman. There are 97 free libraries, two-thirds

supported by private subscription; they contain 462,000 volumes, and are visited by 85,000 readers yearly; the largest is the Biblioteca Nacional of Rio, which has 120,000 volumes. There are 350 printing-offices, which produce 299 newspapers and magazines; of these 44 appear at Rio Janeiro. The *Jornal do Comercio* prints 15,000 copies daily.

Nothing more impresses a European than the magnificence of the hospitals of Brazil. The Misericordia, founded in 1545, admits yearly 14,500 patients, of whom only 30 per cent are Brazilians, the rest being Europeans; yellow fever forms a heavy contingent, which explains how the mortality is 16 per cent, or double the rate of hospitals in England. Attached to it are four dispensaries, which give medicine gratis to 11,000 applicants, the whole being under the charge of Sisters of Charity. The hospital has an income of £198,000 per annum, but the expenditure seldom exceeds £180,000 sterling; say £12 for each indoor patient, and 10s. for those relieved at dispensaries. There are six other hospitals at Rio, besides twenty-eight institutions for sick or distressed Europeans; an orphanage for girls which gives dowries of £200 each to a certain number every year, a refuge for aged women, a school for deaf and dumb, and numberless similar institutions. Every province in the empire has, moreover, its own Misericordia hospital and an orphanage for destitute children.

ARGENTINE REPUBLIC.

THIS confederacy of fourteen provinces has made great progress since the overthrow of General Rosas in 1852, and now ranks next after Brazil among South American States. The census of 1869 showed as follows:—

	Area.		Population.
Buenos Ayres . .	45,000	sq. miles	495,100
Cordoba . . .	70,000	„	210,500
Entre Rios . . .	40,000	„	134,300
Corrientes . . .	40,000	„	129,000
Tucuman . . .	20,000	„	109,000
Santa Fè . . .	36,000	„	89,100
Eight other provinces .	349,000	„	569,900
	600,000	„	1,736,900
Indian territory . .	580,000	„	100,000
	1,180,000	„	1,836,000

Buenos Ayres and Santa Fè constitute the second great sheep-farm of the world, possessing 63,000,000 sheep, which produce 200,000,000 lbs. wool per annum. Tucuman raises enough sugar for three of the upper provinces. Cordoba is interesting for its university, dating from 1613. Corrientes and Entre Rios, forming the Argentine Mesopotamia (between the mighty rivers Paranà and Uruguay), are the most favoured part of South America in wood, water, soil, and climate.

The population of Buenos Ayres is largely composed of European settlers, being made up thus :—

Argentines	245,000
Italians	110,000
British	38,000
Spaniards	34,000
French	32,000
Germans and Swiss . .	21,000
Americans	1,600
Various	13,400
	495,000

Natural increase is small, although the climate is healthy. The influx of immigrants is about 32,000 yearly, or double the number of persons leaving the country. All

manner of physical deformity or of mental insanity is rare; but heart-disease is very prevalent in the city of Cordoba, which some attribute to the political disturbances, others to the water-supply. Goitre is met with in the provinces at the foot of the Andes. Lockjaw is much commoner than in Europe, owing to the rarity of the air. All classes are temperate in eating and drinking, courteous to each other and to strangers, and emulous of placing themselves on a par with Europeans.

Pastoral industry has been so prosperous during the last twenty-five years that some of the Estancieros have large incomes. Wool usually fetches 6d. per lb.; thus a farmer of 100,000 sheep has an income of £10,000 sterling, his expenses not exceeding half that sum. The returns of cattle, compared with exports, show as follows, for all the fourteen provinces:—

	Number.	Value.	Export.	Value.
Sheep .	63 million	£16,000,000	Wool and skins	£5,725,000
Cattle .	12 „	12,000,000	Hides, beef, tallow	4,410,000
Horses .	4 „	4,000,000	...	...
		£32,000,000		£10,135,000

Thus each inhabitant of the republic has about £18 worth of farming-stock, which produces him an income of £6 per annum. If we take, however, the province of Buenos Ayres singly, we find that each inhabitant has 110 sheep, 12 cows, and 4 horses, representing a value of £43 sterling and annual exports of £7,400,000, say £15 per head, the same as in Australia.

Tillage is in its infancy, but the new colonies of Swiss and Italian settlers in Santa Fè and Gran Chaco are now able to raise enough grain for home consumption, say 4,000,000 bushels, besides exporting 200,000 bushels to Europe. This industry can never prove so lucrative as the

pastoral, since the highest price that can be profitably paid for wheat at Rosario is 2s. 6d. per bushel. The Santa Fè colonists have 700,000 acres under crops, and the value of their farms is put down at £1,864,000, which, divided among 3185 families, gives an average of £585 to each family. One of the most important is the Central Argentine colony, with 3000 population and 100,000 acres under tillage. There is also a colony of Italian wheat-growers at Chivilcoy, province of Buenos Ayres, besides a Welsh colony of 900 souls at Chubut in Patagonia. The yield of wheat in Santa Fè ranges from fifteen to forty fold. Excellent land, free of timber, can be rented in any of the Santa Fè colonies at 1s. per acre, or purchased at £1 per acre, the latter payable in five years, without interest. Land for sheep-farming may be bought very cheap in the upper provinces, say 4d. an acre, but lacking facility for conveying products to market. The usual price in Buenos Ayres is 25s. per acre.

There are nine railways, the most important being as follows:—

	Miles.	Cost.		Owner.
Great Southern .	270	£7,500	per mile	English Company
Central Northern	336	4,500	,,	Government
Central Argentine	246	6,400	,,	English Company
Western . .	175	9,500	,,	Government
Andine . .	158	5,200	,,	,,
East Argentine .	100	10,000	,,	English Company
Three other lines	97	10,000	,,	,, ,,
	1382	£7,700	,,	

The above lines carry 3,500,000 passengers and 650,000 tons of cargo yearly, the dividends varying from 8 per cent on the Great Southern and the Western to ½ per cent on the Tucuman and the East Argentine.

These railways, as well as immigration, have led to a

prodigious increase of exports, as shown by the following returns :—

	1860.	1873.	Increase.
Wool, bales . .	42,275	211,000	5-fold
Sheepskins . .	10,715	62,500	6-fold
Cow-hides . .	1,662,500	2,538,000	50 per cent
Jerked beef . .	21,240 tons	33,500 tons	55 ,,
Value of exports .	£4,222,000	£9,174,000	110 ,,

During the last ten years the balance of trade has been against the country.

	1868-1877.
Imports of ten years . .	£87,000,000
Exports ,, . .	71,000,000
Surplus imports .	16,000,000

There are five banks, but the emission may be said to be confined to the Provincial Bank of Buenos Ayres: the paper dollar of this bank was worth sixpence in 1836, but has steadily declined to its present value, three halfpence, that is 160 to the pound. Emission £6,200,000, deposits £4,700,000, capital £2,400,000; rate of discount usually 6 per cent. The London and River Plate Bank, with a capital of £1,500,000, has averaged in the last fifteen years a dividend of 8 per cent.

The public debt averages £8 : 10s. per inhabitant, and is composed of £13,000,000 due to London bond-holders, and £5,500,000 home debt. The interest and sinking fund are paid regularly, and the nine Argentine loans on the Stock Exchange stand highest after Brazil among South American securities. The revenue averages 30s. per head of the population, having doubled since 1863.

Public instruction is more advanced than in the rest of the continent, and costs £305,000 per annum, say £3 per scholar, or 3s. 6d. per inhabitant. There are 1816 schools, attended by 119,000 children, besides the universities of Cordoba and Buenos Ayres, 14 provincial colleges, 3 mining

schools, 4 model farms, a national observatory, and 156 free libraries. These libraries count 130,000 volumes, and 170,000 readers yearly. The school population is 6 per cent of the number of inhabitants. There are 74 newspapers, of which 22 appear at Buenos Ayres in Spanish, French, English, Italian, and German.

CHILE.

THIS republic has long enjoyed the reputation of the most industrious of all the South American States. For twenty years it supplied wheat to California and Australia, being at that time the only country in the South American continent that raised grain for its own inhabitants. Its minerals, especially copper, were also favourably known in Europe. An era of remarkable prosperity was initiated by Mr. Wheelwright's introduction of steam navigation into the Pacific in 1840, since which time the growth of trade has been four times greater than of population.

	Trade.	Per inhab.
1844 .	£2,937,000	35s.
1854 .	6,391,000	72s.
1865 .	9,222,000	92s.
1876 .	14,173,000	140s.

The exports average £3 per inhabitant, but have been declining since 1876, owing to the depression in copper, the deficient wheat harvests, and a severe monetary crisis.

The balance of trade during the last ten years has been almost even.

	1868-1877.
Imports of ten years . .	£56,000,000
Exports ,, . .	54,000,000

The amount of English capital, as already shown, is

£12,000,000, including seven loans in London, which make up £7,500,000, and which were chiefly spent in making railways. The various lines belong mostly to Government, and form a complete network from Valparaiso to Araucania, viz.—

Government lines	810 miles
Company ,,	170 ,,
	980 ,,

The Valparaiso and Santiago line, 142 miles, cost the State about £1,500,000 sterling; the rest averaged £9000 per mile, and the net profits on all the Government lines are about 3 per cent on their cost. The Copiapo line belongs to a company, who have reaped very large profits. It was the first built in South America (except that of Central America at Panamà), the proprietor, Mr. Wheelwright, carrying it up to the Puquios mines, 3500 feet over sea-level.

Public instruction is carefully attended to, Chile being second only to the Argentine Republic, in South America, for the ratio of her school population.

There are 1650 schools, attended by 98,000 children, say 5 per cent of the number of inhabitants.

PERU.

THIS republic is best known in Europe for its export of guano. During thirty years the shipments of this staple product averaged 300,000 tons, worth £3,000,000 sterling, but it has been in a measure superseded since 1871 by nitrate. When the Chincha Islands were surveyed in

1853 they were found to contain 15,000,000 tons guano, valued at £75,000,000 sterling. They are now showing signs of exhaustion. The growth of Peruvian trade may be dated from the first shipments of guano in 1840, reaching a climax in 1872, since which time there has been a decline.

1830	Imports and exports . . .	£1,640,000
1840	,, ,, ...	2,370,000
1850	,, ,, ...	3,220,000
1872	,, ,, ...	12,790,000
1875	,, ,, ...	10,180,000

The balance of trade for the last ten years has been in favour of Peru.

	1868-1877.
Imports of ten years . . .	£49,000,000
Exports ,, . . .	60,000,000
Surplus of exports . .	£11,000,000

The amount of English capital sunk in Peru is £36,000,000, of which £32,000,000 may be regarded as lost, being the sum of dishonoured loans. A great portion of the money borrowed in London was expended in making railways to points of the Andes previously inaccessible. The Oroya line ascends to a height of 15,600 feet, being already half-way to the Cerro Pasco mines, supposed to contain £120,000,000 worth of silver. The Tacna and Bolivia line cost £34,000 a mile. In 1877 the lines completed, or in construction, exceeded 2000 miles, having cost up to January of that year the sum of £36,000,000.

	Miles.	Cost.
11 Government lines . .	1280	£25,500,000
10 Company ,, . .	750	10,500,000
	2030	£36,000,000

The lines in actual traffic were 1200 miles in length, and may be said to have cost £30,000 per mile, but the earnings cannot be ascertained.

Peru, once famous for its mineral treasures, is now in so impecunious a condition, that in 1878 (before the outbreak of war with Chile) the paper money was at 9s. to the £, equal to a discount of 55 per cent. Yet there are persons living who remember when Peru had forty smelting-works, turning out hundreds of tons of pure silver yearly. The mines at present produce about £290,000 worth, most of which is exported.

Sugar-planting is the most valuable branch of agriculture. It was, in a measure, introduced by a Scotchman named Henry Swayne, in 1832, and greatly improved by James Cahill in 1865, the latter bringing from the United States all the newest machinery. The crop averages 110,000 tons; the exports of sugar in 1877 were little under £2,000,000 sterling.

The revenue of Peru is nominally £11,000,000, but as the dollars have fallen to 2s., it is in reality about £5,000,000, say £2 per inhabitant.

Schools have been established in all the departments, and the scholars form about 3 per cent of the population.

MINOR REPUBLICS.

Bolivia.

Area, 840,000 square miles; population, 1,987,000. The foreign trade averages £2,000,000 per annum, imports being slightly in excess of exports. The coffee known as Yungas is the best in the world, but costs 12s. per lb. in

Buenos Ayres, owing to the expense of land carriage. It is proposed to make a road from Santa Cruz to the river Paraguay across the Chaco wilderness, or else to open up the navigation of the Rio Pilcomayo from Chuquisaca to Asuncion, a length of 1650 miles. Both projects are visionary.[1] The only access to Bolivia is by the Tacna railway, from the Peruvian seaboard, the line rising to a height of 14,600 feet. There are four trains weekly, and the receipts last year left £700 over expenses. Silver mines are numerous, but mostly abandoned by their owners. The country is as mountainous as Switzerland, the scenery being almost as fine. No regular statistics are published, but the death-rate is high, owing to the frequent revolutions. The silver coinage is of so low a value that the dollar seldom reaches 3s.; there is, nevertheless, a law against exporting it, "lest the country should be impoverished." The loan due in London was contracted for making a railway to connect with one of the tributaries of the Amazon.

PARAGUAY.

In soil and climate one of the most favoured parts of the globe, with a population officially stated at 221,000 souls, but probably less. The heroism of the people in resisting the invading armies of Brazil and Buenos Ayres has never been surpassed in history,[2] but resulted in the annihilation of the Paraguayans, after a prolonged struggle of five years' duration. The railway from Asuncion to Paraguari is thirty miles in length, and has recently been sold by Government to a Brazilian company. Tobacco and

[1] It is also proposed to connect Tucuman, Jujuy, and La Paz by way of the Humahuaca valley and Tarija, but the project cannot be regarded as serious.

[2] See Colonel Thomson's *War of Paraguay*.

Paraguayan tea are the chief products. Before the war Asuncion exported £200,000 worth annually of the tea, commonly called Yerba-mate.

URUGUAY,

sometimes called Banda Oriental, is the smallest republic in South America, and a little larger than England. The population is almost 500,000 souls, viz.—

Natives	260,000
Italians	58,000
Spaniards	42,000
French	26,000
Brazilians	14,000
English and Germans	6,000
Various	67,000
	473,000

The proportion of wealth to each inhabitant is very great, the income-tax returns showing as follows:—

	Population.	Income.	Per inhabitant.
Montevideo	127,700	£20,860,000	£164 per annum
Country districts	345,300	51,540,000	148 ,,
	473,000	£72,400,000	£152 ,,

Trade has been almost even for some years, the balance against the country being trifling, say £400,000 per annum:—

	1868-1877.
Imports of ten years	£34,100,000
Exports ,,	30,200,000
Surplus imports	£3,900,000

The returns of live stock show for each inhabitant 15 cows, 3 horses, and 34 sheep, worth about £26 sterling, and the exports of wool, tallow, etc., reach £3,000,000, or

£6 per inhabitant. The wheat crop usually amounts to a value of £720,000 sterling.

Revenue averages £2 per head, and the public debt in 1876 amounted to £9,000,000, or £19 per inhabitant, but has been reduced by the Dictator Latorre to £6,000,000. There are three railways, making up 160 miles; earnings 3 per cent. Public instruction is improving; 245 schools are attended by 16,800 children, say 4 per cent of the population. Charitable institutions in Montevideo are numerous and munificent.

Columbian Republics.

Venezuela is very subject to earthquakes and revolutions. Area, 403,000 square miles; population, 1,784,000. Imports and exports are almost even, together £6,500,000 yearly. The chief export is coffee, worth £2,500,000. National Debt £20,000,000, including £6,500,000 due to Great Britain. The revenue is barely £700,000.

Ecuador has a mixed population of 1,000,000 souls. Revenue £300,000, or 6s. per head. This republic is remarkable for the fact that its capital, Quito, stands 9,534 feet above the sea-level, and enjoys a delightful climate almost under the line. Nevertheless, the adjacent volcanoes incommode the citizens. Death-rate uncertain.

New Grenada.—This republic is remarkable for possessing the Isthmus of Panamà, with a valuable transit trade from the Atlantic to the Pacific and *vice versa*. The exports average £2,500,000, being nearly double the imports. Debt £10,000,000, or 68s. per inhabitant, the revenue being under 9s. per head. The Panamà railway, 47 miles long, gives great importance to this republic. The *Panamà Star and Herald* is the oldest English paper in South America, and circulates all over the Spanish republics.

UNITED STATES.

ALTHOUGH the growth of the United States for a quarter of a century after Independence was very slow, it received a great impulse about the beginning of the present century from two principal causes, namely, the invention of Whitney's cotton-gin, and the activity of shipbuilding. A second epoch dates from 1820, when European emigrants began to settle in the country, to which cause is in a great measure attributable the progress attained in the last sixty years.

According to the census of 1800, the population of the United States was little over that of Portugal. There were but two cities which had up to 40,000 inhabitants, and four towns over 10,000 souls each. Seventy per cent of the entire population lived in log huts, 25 to 30 feet in length. Roads had not yet been made through the primeval forests, nor was much known respecting the country beyond the Alleghanies. The Bey of Tripoli was the first, in 1801, to declare war against the young republic, for refusing to pay tribute like the European powers to the Barbary pirates. Hostilities with Spain occurred a few years later, ending in the annexation of Florida. France had already been prevailed upon to sell Louisiana, just as in later years Mexico ceded California, and Great Britain the Oregon territory. While pursuing a peace policy, the American Government always displayed great energy in making its flag respected, and exacted indemnities from Denmark, Naples, Spain, Portugal, and France. In 1836 war with France seemed inevitable, on the score of indemnities for injuries inflicted in 1805, but the French Government admitted the claim, and paid £1,000,000 sterling.

The various cessions of territory to the United States, and the prices paid, are shown as follows :—

Date.	Territory acquired.	Area, sq. m.	Cost.	Per acre.	From
1776	13 states .	421,000	£15,000,000 [1]	14 pence	G. Britain
1803	Louisiana .	1,172,000	3,000,000	1 „	France
1819	Florida . .	60,000	1,000,000	6 „	Spain
1829	Indian lands .	123,000	5,500,000	17 „	Indians
1845	Texas . .	376,000	2,000,000	2 „	Mexico
1846	Oregon . .	280,000	...	...	G. Britain
1848	California .	546,000	3,000,000	2 „	Mexico
1853	New Mexico .	46,000	...	...	...
1867	Alaska . .	580,000	1,500,000	1 „	Russia
		3,604,000	£31,000,000	3d. average	

Thus a territory, originally the size of France and Spain, has grown to the dimensions of the European continent, by acquiring possessions from five of the great Powers, and from Mexico, all at a very trifling cost. The growth of population has been equal to that of territory, namely nine-fold, viz.—

	Whites.	Coloured.	Total.
1800 . .	4,304,500	1,001,400	5,305,900
1878 . .	38,976,000	5,368,000	44,344,000

By the census of 1870 it appears that 14 per cent of the population consisted of European emigrants. The sexes are more evenly divided than in Europe, being as 102 males to 100 females.

The average influx of emigrants was as follows :—

	Per annum.	Immigration.
1820 to 1839 . .	35,600	712,000
1840 to 1859 . .	215,400	4,308,000
1860 to 1879 . .	292,500	5,850,000
Sixty years . .	181,200	10,870,000

[1] This was the cost of the War of Independence.

The proportions were—46 per cent British, 35 per cent German, and 19 per cent of various nationalities.

The country sustained a serious check by the civil war (1861-65), in which 581,000 men perished. The returns show that 2,653,000 men served in the Northern army, including 186,000 negroes. The Confederate army at one time (1864) counted 549,000 men.

The number of Indians diminishes yearly, and in another century there will be but scattered remnants of the Pawnees, Mohicans, Sioux, and other famous tribes.

In 1836, when the United States Government purchased 94 million acres of Indian country at 17d. per acre, the total Indian tribes numbered 333,000 souls, including 67,000 fighting men. Lands were set apart—namely, 150 million acres, chiefly in Montana and Dakotah Territories, where their settlements now number 42,000 families.

The total red-skinned population is as follows :—

Living by the chase . . .	98,108
Semi-civilised	52,113
Settled on farms . . .	100,085
Voting as citizens . . .	24,595
	274,901

This shows a decline of 18 per cent in little more than forty years.

Whether for internal industry or foreign commerce, the United States are singularly favoured. They can put boundless territories under tillage, and their coast-line is equal to half the earth's circumference, comprising 10,300 miles on the Atlantic side, and 2300 on the Pacific.

In spite of the great exodus to the Western States, the rural population does not grow so rapidly as the urban :—

	Over 10,000 population.	Urban population.	Rural population.
1840 . . .	44 cities	8 per cent	92
1870	226 ,,	21 ,,	79

At present there are thirty cities of greater magnitude than Philadelphia was seventy years ago.

Criminal statistics for 1876 showed 47,000 convictions, or one in 900 inhabitants, being double the ratio of Great Britain. It is remarkable that although foreigners compose but one-seventh of the population, they supply 14,000 offenders, or 30 per cent of the total.

AGRICULTURE.

Nothing has more powerfully contributed to the progress of the United States than the rapid development of agricultural interests, based on the easy acquisition of land. During almost half a century the Government sold annually several millions of acres at 5s. an acre, and made liberal grants to various railway companies. Finally, in 1862, the Homestead-law was passed, whereby free lots of 160 acres were obtained by settlers on condition of occupying the land five years.[1]

In the earlier part of the century the public lands were supposed to comprise 314 million acres, and the accounts of 1837 showed 75 millions sold to settlers, and 239 unsold. Since then the United States flag has taken in new territories, and the returns of sales and grants down to 1875 show as follows:—

		Sales per annum.
Sold before 1801 . . .	5,000,000 acres	250,000 acres
1801 to 1830 . . .	23,000,000 ,,	750,000 ,,
1831 to 1875 . . .	332,000,000 ,,	7,000,000 ,,
Lands for sale . . .	1,475,000,000 ,,	...
	1,835,000,000 ,,	or 3,000,000 sq. miles

[1] The fees attending the title to a Homestead farm are only £3 sterling.

There are 724 million acres of surveyed lands, ready for occupants. From 1875 to 1879 the sales averaged more than 7,000,000 acres yearly, notwithstanding the decline of immigration. Moreover, the land grants to railway companies during ten years (1861-1870) averaged 21 million acres yearly, besides petitions for 150 millions more. The area of lands taken up by settlers in the last forty-five years is equal to the aggregate extent of France, Spain, and Portugal, or five times that of the United Kingdom. The area still available for settlers is twenty times that of the British Islands, but one-fourth of it, comprising Alaska territory, is of little value.

Between railway concessions, homestead grants, etc., all the available Government lands will probably be disposed of in the remaining years of this century.

The development of agriculture in the last forty years appears as follows:—

	Acres tilled.	Grain crops.	Value of all crops.	Value of Agricultural exports.
1840 .	45,000,000	615,000,000 bush.	£82,000,000	£16,000,000
1878 .	138,000,000	2,150,000,000 ,,	385,000,000	107,000,000

At present the average is 50 bushels of grain for each inhabitant against 35 bushels in 1840-50. The surplus of wheat for exportation now ranges from 150,000,000 to 185,000,000 bushels per annum.

The official returns for 1878 show as follow:—

	Acres.	Average yield.	Value of crop.
Wheat .	32,000,000	13 bushels	£93,000,000
Maize .	50,000,000	26 ,,	101,000,000
Oats, etc. .	17,000,000	21 ,,	34,000,000
Potatoes .	2,000,000	90 ,,	15,000,000
Hay .	24,000,000	1½ ton	54,000,000
Cotton .	12,000,000	200 lbs.	47,000,000
Sugar .	160,000	1600 ,,	3,000,000
Tobacco .	550,000	900 ,,	8,000,000
Sundries .	290,000	...	30,000,000
	138,000,000		£385,000,000

The average value of crop is nearly £3 sterling per acre. As the farmers pay no rent, and have cheap freight for their products, they can afford to sell grain at prices much lower than in Europe. In 1866 the usual freight from Chicago to New York was 27 cents per bushel; at present it is only 7¼ cents.

The cotton-fields, covering a larger area than the kingdoms of Denmark or Belgium, are cultivated by 120,000 whites and 500,000 negroes. One man can till 12 acres, or, with machinery, 30 acres. Maize requires only one-fifth the labour of cotton, and this crop, along with wheat, takes up the same area as the kingdom of Prussia. Hay represents a value superior to the cotton crop. Potatoes have trebled since 1850. The hop crop now exceeds 5000 tons. Rice gives 30 bushels per acre, sugar ¾ ton, besides 80 gallons molasses—the latter item usually paying the working expenses on a sugar-farm. Since the emancipation of the negroes, many of the cotton-farms are worked similar to the Metayer system of France and Italy, the owner giving the labourers a half or a quarter of the crop, with board. The average work of a cotton-picker before the emancipation was 14 bales; but now it is 7 bales.

Great Britain takes one-half the cotton crop, one-third is kept for home consumption, and the rest goes to France and other countries. The production of cotton during fifty years has been as follows:—

	Export. lbs.	Home consumption. lbs.	Total crop. lbs.	Average price.
1830-1840 .	610,000,000	110,000,000	720,000,000	6d. per lb.
1841-1850 .	920,000,000	220,000,000	1,140,000,000	4d. „
1851-1860 .	1,260,000,000	350,000,000	1,610,000,000	5d. „
1861-1870 .	505,000,000	415,000,000	920,000,000	20d. „
1871-1878 .	1,350,000,000	600,000,000	1,950,000,000	6d. „

The production now exceeds 2,400,000,000 lbs.; the value in the United States is about fivepence farthing, or sixpence in England.

Vineyards are extending so rapidly in California, Ohio, and other States, that the area under vines now exceeds 130,000 acres, the vintage averaging 20,000,000 gallons: this is equal to 160 gallons per acre, against 120 in Australia. California produces one-fourth of the total wine crop.

It would be difficult to ascertain the number of farms in the early part of the century, but we know that in 1810 the total value of cotton and other agricultural exports was £5,000,000 sterling. Very little progress was made for the next thirty years. Mr. H. Murray, writing in 1834, says: — "Agriculture is in its infancy in the United States, the country being covered with dense back-woods. Even the State of New York is still three-fourths forest. Nevertheless, we shall probably see the United States leave all other nations behind them, as this country possesses more fertile land than the whole of Europe, has magnificent rivers, and is occupied by a very energetic people. The best land can be purchased from 8s. up to 24s. an acre." At that time the exports comprised 1,000,000 barrels flour, 90,000 casks of pork, 150,000 tons of cotton, and 120,000 barrels of rice; but the dearness of freight, as the farmers said, alone prevented them from raising food to supply one-half of Europe.

The following returns show that agriculture in the United States has made more progress in the last eighteen years than in a century previous:—

	Export of Grain.
1860-1870, annual average . .	£12,100,000 sterling
1878 „ . . .	36,150,000 „

The great increase of grain crops has been accompanied by an extraordinary rise in the quantities of meat, etc., exported, viz.—

From 1870 to 1878.	Increased quantity.
Beef has increased . . .	3½ fold
Bacon and hams . . .	15 „
Cheese	2 „
Lard	10 „

In the above interval of eight years the prices of bacon and pork fell 45 per cent. Moreover, an active trade sprang up in the exportation of live cattle to England.

Customs returns for 1879 show that the number of live cattle exported to Great Britain had trebled in the past year.

The ordinary value of farm-stock is £10 for horses and £5 for cattle, 14s. for sheep, and 22s. for hogs.

The increase of cattle has not been so rapid as in the River Plate territories or Australia, the returns being as follow:—

	Horses.	Cows.	Sheep.	Pigs.	Value of stock.
1840 .	4,000,000	15,000,000	19,000,000	26,000,000	£93,000,000
1879 .	12,500,000	33,500,000	38,000,000	35,000,000	355,000,000

The ordinary slaughter of cattle is 7,500,000 head, besides which there are 150,000 shipped yearly to Great Britain, and 100,000 killed at seaports to be sent to the same destination. The live and dead cattle thus shipped for England had for three years averaged a value of £3,000,000, but rose in 1878 to £7,500,000. The slaughter of hogs is 4,500,000 yearly, of which total one-third is at Chicago. Sheep have improved in breed, but declined in numbers since 1867. The following Table shows the advance of this industry in the last forty years:—

	Sheep.	Wool clip.	Average fleece.
1836 . .	12,890,000	42,000,000 lbs.	3¼ lbs.
1867 . .	42,300,000	148,000,000 „	3½ „
1877 . .	35,500,000	208,000,000 „	6 „

At present the average fleece is the same weight as in Australia. The largest sheep-farm in North America is at Albuquerque, New Mexico, where one squatter has 500,000 sheep on an area of thirty square miles.

The largest cattle-owner is Mr. Sam. Allen of Texas, who has 225,000 horned cattle on a farm of 4,000,000 acres (6400 square miles), employing 400 herdsmen and 3000 horses.

Comparing the census of 1870 with that of 1850, it appears the number of farms had increased 80 per cent, viz.—

	Farms.	Acres.	Average farm.
1850 . . .	1,449,000	303,000,000	209 acres
1870 . . .	2,660,000	417,000,000	153 „

The average size of the farms is diminishing, and the area under cultivation increasing in inverse ratio.

	Farm area per inhab.	Tillage per inhab.	Prop. of farms tilled.
1850 .	13 acres	2 acres	16 per cent
1870 .	11 „	3½ „	32 „

In other words, one-third of the farm area is now under crops, whereas in 1850 the farmers had only ploughed one-sixth of their holdings.

The largest farms are in California and Texas, the smallest in Massachusetts and Connecticut.

	1850.	1860.
California, average farm .	4470 acres	468 acres
Texas „ .	942 „	591 „
Connecticut „ .	106 „	99 „
Massachusetts „ .	99 „	94 „

Mr. Mitchell of San Joaquin valley, California, has

90,000 acres under wheat, Dr. Glin,[1] of the same State, 45,000 acres; and Mr. Dalrymple of Dakotah 70,000 acres. They can raise wheat profitably at 3s. per bushel, to which adding freight, the selling price in San Francisco or New York is only 4s. The average crop is 13 bushels per acre, or half the average for Great Britain.

The census of 1870 shows the farms to be classified thus :—

Under 20 acres . .	474,000 farms
From 20 to 100 . .	1,602,000 ,,
From 100 to 500 .	565,000 ,,
Over 500 acres . .	19,600 ,,
	2,660,600 ,,

The above farms, with their houses, cattle, implements, etc., represented a value of £2,224,000,000. The sum paid yearly for wages is £62,000,000 sterling,[2] and the annual receipts from agriculture and cattle-farming sum up £535,000,000.

In the single item of dairy-farming the total value produced in 1840 was under £7,000,000, whereas in 1870 the dairy-farms of New York alone yielded 4½ times that amount. The United States at present produce 460,000 tons of butter and 120,000 tons of cheese, the total dairy produce, including milk, being valued at £60,000,000 sterling. New York stands for one-third of the cheese, each cow giving about 330 lbs. per annum.

The new wheat-fields are mostly beyond the Mississippi. In 1876 no fewer than 4000 flat boats descended that river, carrying 9,000,000 tons of grain. The quantities of

[1] On this farm is used an improved kind of machinery; each machine can cut, thresh, winnow, and bag sixty acres of wheat in a day.

[2] Wages vary from £16 a year in South Carolina to £84 in Nevada for indoor servants, with board.

wheat raised in the last thirty years have been in the following manner:—

Wheat crops.	Cis-Mississippi.	Trans-Mississippi.	Total.	Bushels to pop.
1849	95,000,000 bushels	5,000,000 bushels	100	4½ per head
1877	212,000,000 ,,	153,000,000 ,,	365	8½ ,,
1878	215,000,000 ,,	208,000,000 ,,	423	9½ ,,

In thirty years (while the population has only doubled) the wheat-crop has quadrupled. Comparing the extent now under crops with that of 1850, we find an increase of 81,000,000 acres in twenty-eight years, say 3,000,000 acres a year. In the same interval the value of farms and cattle has risen at the rate of 8½ per cent per annum.

SHIPPING.

Notwithstanding the illiberal restrictions imposed by Congress, the commerce of the country has increased in fifty years on a par with that of Great Britain, namely eight-fold, the carrying trade, however, suffering a notable decline in recent years.

"At the beginning of the century," says Yeats, "the commerce of the world seemed passing into American hands, their shipping having increased five-fold in twenty years." In 1808 it amounted to 110,000 tons, and was second only to that of England. Ten years later their ocean clippers had gained such reputation, that Mr. Grantham says people used to go to Liverpool to see them.

The invention of steamers was first practically adopted by Fulton, on the Hudson, and in 1838 there were 800 American steamers plying on American waters. For thirty years preceding the Civil War the dockyards built 140,000 tons of vessels annually; but since 1861 the movement has been downward. The following Table gives the tonnage at various epochs:—

		Tons.	Increase.
Period of prosperity	1808	110,000	...
	1830	1,268,000	50,000 tons per ann.
	1851	3,772,000	117,000 ,, ,,
	1861	5,540,000	180,000 ,, ,,
			Decrease.
Period of decline	1868	4,352,000	170,000 tons per ann.
	1877	4,242,000	12,000 ,,

At present an effort is made to revive the shipping interest, which can only hope for success by repealing the Navigation Laws and the duties on imported iron.

The American marine in 1877 stood as follows:—

Sailing vessels, high seas	1,421,000 tons
,, ,, coasting	1,650,000 ,,
Ocean steamers	190,000 ,,
River and coasting do.	981,000 ,,
	4,242,000 ,,

Before the Civil War the American dockyards were not able to build vessels fast enough for the increase of commerce, as appears from the proportion of trade passing to foreign ship-owners. Since the war the bulk of the trade has been done on foreign bottom:—

	Commerce.	American bottom.	Foreign bottom.
1808	£19,000,000	70 per cent	30 per cent
1835	40,000,000	65 ,,	35 ,,
1865	125,000,000	48 ,,	52 ,,
1878	230,000,000	25 ,,	75 ,,

According to the United States law no foreign vessels can engage in coasting or internal trade, which is three times the magnitude of the foreign commerce. The vessels occupied in 1878, and the tonnage borne by them, are shown as follows:—

	Sea-going vessels.	Tons.	Coasting.	Tons.	Total vessels.	Total tons.
American	10,594	3,642,000	74,219	34,143,000	84,813	37,785,000
Foreign	20,202	10,821,000	...	...	20,202	10,821,000

The American sea-going vessels average 402 tons, which is 3 per cent larger than the average of British shipping. On the Mississippi and its affluents, navigable for 17,000 miles, there are more than 1000 steamboats, which carry passengers for one cent per mile; and 4000 flat boats, carrying 9,000,000 tons of merchandise annually. The tonnage of the various ports in 1877 showed that the carrying trade between the United States and foreign countries was in this proportion—43 per cent on British bottom, 32 per cent various flags, 25 per cent American, in all 13,500,000 tons entries.

COMMERCE.

Whitney's cotton-gin may be said to have laid the foundation of American trade—the hand-picking previously in use was so costly that cotton was only used for candle-wick. The exports of this staple were as follows:—

1790	90 tons
1800	8,000 ,,
1832	145,000 ,,
1878	650,000 ,,

For nearly half a century cotton formed the chief article of export, but in recent years it has become very inferior in importance to the grain shipments. The growth of American trade since 1800 has been as follows:—

Annual average.	Imports.	Exports.	Total.
1801 to 1830 . .	£12,000,000	£9,000,000	£21,000,000
1831 to 1850 . .	22,500,000	20,500,000	43,000,000
1851 to 1870 . .	59,000,000	57,000,000	116,000,000
1871 to 1878 . .	108,000,000	117,000,000	225,000,000

The total imports for seventy-eight years amounted to £2,868,000,000, and the exports to £2,750,000,000. It has been already shown (page 46) that imports are over-

valued ·11 per cent, so that if we take off 10 per cent from the above sum of imports, we find the real value to be £2,581,000,000, thus leaving a balance of £169,000,000 in favour of the country.

Protective tariffs have at all times impeded import trade, the *ad valorem* duties ranging as follows :—

	Highest.	Lowest.	Average.
1801 to 1830 . . .	60 per cent	6¼ per cent	22 per cent
1831 to 1860 . . .	28 „	8 „	18 „
1861 to 1870 . . .	44 „	12 „	34 „

The first protection tariff was that of Madison in 1816. The second, which was still higher, was in 1824. The third, in 1828, raised the import duties to an average of 60 per cent, and threatened civil war, until the Southern States compelled Congress in 1832 to reduce it to an average of 20 per cent, which remained in force until the war of 1861. The present tariff is in many respects more oppressive than its predecessors.

The most extraordinary revolution in trade is that which has taken place since 1872, viz.—

1872 imports to exports as	135 to 100
1878 „ „	60 to 100

In the subjoined lists will be seen the fall of imports and rise of exports in the said interval of six years—

Imports.	1872.	1878.	Decrease.
Metals and minerals . . .	£18,000,000	£6,000,000	67 per cent
Manufactures	45,000,000	24,000,000	47 „
Sundries	74,000,000	62,000,000	16 „
	£137,000,000	£92,000,000	33 „

Exports.	1872.	1878.	Increase.
Grain	£24,000,000	£50,000,000	108 per cent
Cotton and tobacco .	45,000,000	43,000,000	...
Bacon, beef, etc. . .	14,000,000	29,000,000	107 per cent
Manufactures . . .	21,000,000	27,000,000	30 „
	£104,000,000	£149,000,000	43 „

The export of food, which formed but 30 per cent of the total in 1872, has now risen to equal all other articles in the aggregate. The shipments of grain in 1878 were sufficient to feed 30 million persons for twelve months, and those of meat would give half-a-pound daily to 8,000,000 for the same length of time. Since 1878 the charge of freight by ocean steamers has been reduced almost one-half, thus stimulating the exportation of meat and grain to Great Britain. Cattle, which formerly paid £6 per head, are now carried for £2 : 10s., and grain was reduced in February 1880, from 4d. to 3d. per bushel. Thus wheat from Dakotah or Red River can now be placed in Liverpool for a cost of 15d. per bushel.

The export of dairy produce has notably increased in the last few years; about 80,000 tons of cheese and butter, value £4,000,000 sterling, are annually shipped to Europe, the freight amounting to £260,000 sterling, which would be sufficient to maintain a line of steamers solely for this purpose. The United States railways receive annually £2,000,000 for carrying cheese, butter, and milk.

The countries which take the exports of grain, meat, and cotton, are as follow :—

	Grain.	Meat.	Cotton.	General average.
Great Britain .	62 per cent	75 per cent	68 per cent	68 per cent
Germany . .	...	9 „	6 „	5 „
France . .	...	5 „	16 „	7 „
Spanish America	8 „	...	...	3 „
Low Countries .	...	7 „	2½ „	3 „
Various . .	30 „	4 „	7½ „	14 „
	100 „	100 „	100 „	100 „

In the above-mentioned three staples the United States have left all other countries far behind, the weight of these exports being over 7,000,000 tons yearly.

Another important item is petroleum, which now sur-

passes in value the exportation of tobacco, the yield of the oil-springs increasing enormously (see page 512).

In fine, the exports of the United States have almost trebled in ten years, the figures standing thus :—

1868, value of exports . .	£56,123,000
1878, „ „ . .	148,874,000

Such an increase is unparalleled in any country.

The relative increase of trade with Great Britain in the last fifty years is shown thus :—

	1829-30.	1878-79.
Great Britain . . .	33 per cent	44 per cent
British Colonies . .	3 „	10 „
France	13 „	9 „
Various	51 „	37 „
	100 „	100 „

The increase of trade with Great Britain is owing to the enormous exports of food thither; on the other hand, the imports from England have declined 48 per cent in the last four years.

The aggregate of twenty years' trade, from 1859 to 1878 inclusive, shows—

Imports from Great Britain . . .	£598,000,000
Exports to „ . . .	911,000,000
Balance in favour of United States .	£313,000,000

It is now more than half a century since the United States began to export meat and fish to Europe. In 1830 to 1832 the shipments of pork approached 100,000 barrels annually, worth £250,000.

Cincinnati became the centre of the pork-packers, and its prosperity grew in the same ratio as the slaughter of hogs, which rose to 1,500,000 per annum. In 1876 two new branches of the meat supply were commenced, with such success that this trade promises soon to rival the grain

supply. The first was to ship live cattle to England; the second to slaughter the animals at the port of embarkation, and send over the meat in ice-chambers.

The shipments have been—

	Beef.	Live cattle.
1876 . . .	1,900 tons	2,000 head
1877 . . .	23,000 ,,	70,000 ,,
1878 . . .	25,000 ,,	150,000 ,,

The value of these shipments now exceeds £3,000,000 per annum. Some cattle are also shipped to Cuba, but of inferior description, being valued at only £3 a head, or one-fifth of the average price of those sent to England. Chicago and New York are the principal grain depôts, having stores to hold many hundred million bushels.

The growth of sugar has declined since the abolition of slavery. Thus, from 1850 to 1854 the consumption was 330,000 tons per annum, of which 52 per cent was imported, and 48 per cent native grown. In the last five years (1874-1878) out of 780,000 tons annually consumed, only 70,000 were of native growth, or less than half the quantity of twenty-five years ago.

Coffee is more largely consumed in the United States than elsewhere, that country taking nearly one-fourth of the world's crop. Two-thirds of the supply is obtained from Brazil, the rest from Venezuela and East Indies.

Silk cocoons have been for some time cultivated in California and other States; but raw silk is also imported to the value of £1,000,000 sterling, three-fourths from China and Japan.

MANUFACTURES AND MINERALS.

Until very recently the manufactures were almost exclusively for home use, but since 1876 Americans have

begun to export largely to foreign markets. The progress of manufactures is shown to have been as follows :—

	1850.	1860.	1870.
Operatives	957,000	1,311,000	2,054,000
Wages	£47,000,000	£76,000,000	£155,000,000
Capital employed	107,000,000	202,000,000	424,000,000
Raw material	111,000,000	201,000,000	510,000,000
Manufactures	204,000,000	378,000,000	846,000,000

The returns for 1870 show 252,400 factories,[1] those driven by steam and water power being as follows :—

	Number.	Horse-power.
Steam-engines	40,200	1,216,000
Water-wheels	51,000	1,290,000
	91,200	2,506,000

Three of the older States make up one-half of the manufactures of the Union, as may be seen in the following Table :—

	Cap. employed.	No. of factories.	Value of products.
Pennsylvania	£81,500,000	37,200	£142,500,000
New York	74,000,000	36,206	157,000,000
Massachusetts	46,000,000	13,212	111,000,000
Ohio	28,000,000	22,773	54,000,000
Illinois	19,000,000	12,597	41,000,000
Connecticut	19,000,000	5,128	32,000,000
Missouri	16,000,000	11,871	41,000,000
New Jersey	16,000,000	6,636	34,000,000
Michigan	14,000,000	9,455	24,000,000
Rhode Island	13,000,000	1,850	22,000,000
Indiana	11,000,000	11,847	22,000,000
Other States	86,500,000	83,373	166,000,000
	£424,000,000	252,148	£846,500,000

[1] As an instance of the energy of American manufacturers, the British Secretary of Legation at Washington mentions a boot factory in Massachusetts that was burned down on Wednesday. The owner ordered new machinery on Thursday, and the factory on Friday was turning out 2400 pairs of boots in twenty-four hours, as before the fire.

It would be difficult to classify the wages paid to operatives according to their trades; but the Tables of 1870 show the principal States paid their hands as follows :—

State.	Number of Operatives.	Wages.	Per head.
New York .	352,000	£28,500,000	£82 per annum
Pennsylvania .	319,000	25,500,000	80 „
Massachusetts .	279,000	23,500,000	84 „
Other States .	1,104,000	77,500,000	70 „
	2,054,000[1]	£155,000,000	£75 „

The value of manufactures is shown approximately in the following Table :—

Manufacture.	Factories.	Value.
Flour	13,870	£95,000,000
Cottons and all textiles .	1,350	87,000,000
Metals, arms, cutlery . .	4,020	74,000,000
All leather industries . .	8,660	56,000,000
Clothing . . .	50,000	45,000,000
Saw-mills . . .	20,165	77,000,000
Carpentery, furniture, waggons, etc.	17,170	48,000,000
Machinery . . .	1,380	24,000,000
Paper and printing . .	3,260	22,000,000
Sugar and tobacco . .	2,140	22,000,000
Liquors	3,300	70,000,000
Sundries . . .	126,833	161,000,000
Manufactures . .	252,148	£781,000,000
Minerals . . .	...	65,000,000
Total		£846,000,000

Cottons.—The most important manufacture in the United States is that of cotton goods, which amounts to one-fourth of the world's supply. One operative at Lowell, Massachusetts, can make enough cotton drill to clothe 1500 Chinamen for a year, or 750 Americans. The consump-

[1] The Census shows that this number should be 2,704,000.

tion in the United States is 50 yards per inhabitant—say 2250 million yards, and the exportation 150 million yards, and consuming 700 million lbs. of cotton, or one-third of the crop. The exportation forms but 6 per cent of the quantity manufactured, whereas, in England, 70 per cent is exported. There are 956 cotton factories, employing 160,000 operatives, and 10,500,000 spindles, the number of the latter having risen 50 per cent since 1860.

The value of cotton goods manufactured in the United States was as follows:—

1831 . . .	£8,000,000
1860 . . .	23,000,000
1877 . . .	40,000,000

Massachusetts produces as much cotton fabrics as all the rest of the Union in the aggregate, and the operatives (according to Mr. Connolly and other English travellers) are better fed, better educated, better lodged, more thrifty, and more respectable, than any other operatives in the world. So rapid has been the growth of this industry that thirty-eight years ago cattle grazed where the largest manufacturing towns, such as Lowell and Laurence, now count their tens of thousands of workmen.

Woollens.—This branch of manufactures is burthened by the import-duties on wool. The clip of the United States reaches 208,000,000 lbs., but the factories could consume double that quantity. There are 2890 factories, which consume 250,000,000 lbs. and produce £36,000,000 worth of manufactures.

Silks.—The value of silk goods manufactured in 1875 was over £6,000,000 sterling.

Liquors.—There are 2830 breweries, which produce annually 360,000,000 gallons beer; and 2900 distilleries, producing 72,000,000 gallons spirits. If we add 23,000,000

gallons wine, the total is equal to 112,000,000 gallons alcohol, or 2½ gallons per inhabitant, against 4 gallons in the United Kingdom.

Leather and Boots.—This industry has made great strides. In 1840 it amounted to £6,000,000 sterling, and in 1870 to £55,000,000. Massachusetts makes 100,000,000 pairs of boots yearly for 5s. a pair, say £25,000,000. The machinery for making boots and shoes at Boston is in great demand for various foreign countries.

As a proof of the value of machinery, it is shown that in 1835 there were in Massachusetts 30,000 more boot-makers than at present, yet the factories now produce £14,000,000 sterling more of boots than they did then.

Flour.—In 1840 the flour-mills produced 7,500,000 barrels, the exports of flour to foreign countries then averaging a value of £900,000 per annum. According to the census of 1870, the value of flour manufactured the previous year was £90,000,000 sterling. The export averages 4,000,000 barrels.

Timber.—In 1840 this industry occupied 36,000 log-cutters, who felled timber worth £2,500,000, one-half being used for shipbuilding. At present the annual consumption of forest timber is £77,000,000.

Since 1840 the destruction of forest has been excessive. It is supposed the saw-mills of Maine consume 600,000,000 feet timber yearly, and those of Michigan 900,000,000 feet. The area of timber felled averages 24,000 acres daily, or 7,500,000 acres per annum. The consumption includes an amount valued at £30,000,000 sterling for fencing, £15,000,000 for fuel, £28,000,000 for railway sleepers, house furniture, etc., besides £4,000,000 for exportation. By the close of the century there will be a scarcity of timber east of the Rocky Mountains unless a system of

plantation be adopted, of eucalyptus or other fast-growing timber.

Coal.—Forty years ago this industry was in its infancy, employing but 7,000 miners, who raised 2,000,000 tons yearly. In 1879 the production has exceeded 55,000,000 tons, worth £18,000,000 sterling. The United States coal-fields are seventy times the extent of those of Great Britain, and produce just enough coal for home consumption, say one-third the quantity of England, and one-fourth of that of the world.

Iron.—The returns for 1830 show 29,000 operatives engaged in this industry, the production reaching 184,000 tons. During the last forty years the production of pig-iron has quintupled :—

	Tons.
1840	490,000
1874-1878	2,420,000 per annum

During the great demand for iron in 1872-73 there were as many as 719 furnaces at work, the production of pig-iron in 1873 reaching 5,500,000 tons. A great depression ensued, and in 1875 there were but 216 furnaces at work. The returns for 1878 show a production of 2,570,000 tons. The price fell from £11 in 1872 to £3 a ton in 1878. Bessemer steel was first made in the United States in 1867; the price was then £23 a ton, and has now fallen to £8.

Some of the hardware factories vary the nature of their products according to circumstances; the Peabody rifle-factory of Rhode Island, after producing millions of fire-arms, turned its attention to sewing-machines, of which it now makes 300 daily. During the recent Turkish war the Rhode Island tool-factory took a contract for 1,000,000 rifles at 68s. each, being the largest contract ever taken in the United States.

Petroleum.—This mineral oil was first discovered in Pennsylvania in 1859, since which time the production and shipments have gone on thus:—

	Production.	Exports.
1859-63 Average . .	6 million gallons	...
1864-68 „ . .	13 „ „	11 million gallons
1869-73 „ . .	22 „ „	13 „ „
1874-77 „ . .	47 „ „	22 „ „
1878 „ . .	610 „ „	407 „ „

At present the yield is so great that 400,000 gallons are wasted daily for want of barrels, and it is predicted that the market value of the liquid will soon be as low as 1s. a barrel. The exportation during the years 1873 to 1877 averaged £8,000,000; and the actual production (1879) exceeds 850,000,000 gallons.

RAILWAYS, CANALS, TELEGRAPHS.

At the time of Independence there were few roads through the backwoods, and the chief communication (as at present in Brazil) was by coasting vessels. The nineteenth century, however, was ushered in with various enterprises for constructing highroads, and to this end the Government gave charters to joint-stock companies, which pushed forward so zealously their labours that in 1830 they had opened for public use 115,000 miles of highways.

Canals had, meantime, been commenced and carried out with equal vigour. The grandest of these works was the Hudson and Erie canal, 363 miles long, and 40 feet wide, constructed in eight years, and opened to traffic in 1825. It was carried over a range of hills at a height of 688 feet by means of 83 locks and 18 aqueducts, and cost £1,800,000 sterling. One thousand vessels monthly, paying tolls to the annual amount of £200,000, soon rewarded the labours

of the constructors. The Cincinnati and Erie canal, 306 miles, was opened in 1830, having cost only £600,000. The Delaware and Chesapeake had already been opened in 1826: although but 14 miles long, it had taken three years to make, and cost £400,000, admitting vessels under 10 feet draught, of which 400 passed through monthly. The Hudson and Delaware, 108 miles, cost £440,000, and was opened in 1828; and about the same time another canal from the Hudson to Lake Champlain, thus opening up communication with Canada; this latter cost £175,000 for a length of 63 miles. Several short canals were made in Pennsylvania, summing up 730 miles. The Cincinnati and Miami, 70 miles, and the Dismal Swamp canal to connect with the Ohio river, were made about 1830. Almost rivalling the Hudson and Erie was the Chesapeake and Ohio, opened in 1834 after six years of labour, 360 miles in length and 60 feet wide, being carried through the Alleghany range by a tunnel 4 miles in length. Since then many others have been made, the total of canals now reaching 3200 miles, which have cost £20,000,000 sterling, an average of £6800 per mile.

Canals and rivers render invaluable service for conveyance of grain and other merchandise. It is computed that the Mississippi and its affluents carry yearly £400,000,000 sterling worth of cargoes. For example, the tug-boat Ajax has been known to tow at once thirty-two flat boats carrying 21,000 tons, which would have required 2100 railway waggons.

The Mississippi valley counts 1100 steamers, and 850 flat boats, with a capacity of 415,000 tons; the average cost of transport is 20 pence per ton for 100 miles. On the great lakes there are 900 steamers and 1800 sailing-vessels and flat boats, with a gross tonnage of 590,000 tons;

they carry over 9,000,000 tons yearly, including 2,000,000 tons of grain, the freight to New York being only 7½ cents per bushel.

Railways were begun in 1826, the Quincy and Boston line of 4 miles proving such a success that in 1835 there were 1100 miles of railway in public traffic. Since then the increase has been extraordinary.

	Miles.	Cost per mile.
1850 . . .	9,020	£6,600
1860 . . .	30,630	7,500
1870 . . .	47,250	8,400
1878 . . .	80,853	12,000

The capital invested in these railways down to 1878 was £970,000,000 sterling. During the years 1870 to 1873, the Americans built 20 miles of railway per day.

Most of the railways and canals were at first built with English capital. Thus, in 1841, there was altogether a sum of £42,000,000 lent by London capitalists in the construction of 3430 miles of railway, and 2700 miles of canals.

The first railway of magnitude was that undertaken in 1836, from Baltimore to Pittsburg, 300 miles in length, crossing the Alleghany mountains. In recent years there has been nothing to compare with the Pacific line[1] 3300 miles long, which traverses the Rocky Mountains at double the height of the Mont Cenis tunnel. So exposed is this part of the line, that it has been necessary to construct a snow-shed 22 miles in length.

Many of the new railways have given poor returns. In 1876-77 no fewer than eighty-four lines were brought to the hammer, representing an aggregate length of 7720 miles,

[1] One of the quickest railway journeys on record is that made two years ago from New York to San Francisco in eighty-four hours, being over forty miles an hour for three days and four nights.

and a cost of £83,000,000 sterling, besides 44 other lines ordered to be sold, with a length of 5400 miles, and a cost of £147,000,000 sterling, unable to meet their expenses. Some lines, meantime, are doubling their traffic; the Hudson River Railway, for example, carried 8,250,000 tons merchandise in 1878 against 4,500,000 tons in 1873. The ordinary freight charge in United States by rail is one cent per ton per mile. The traffic returns for all the lines in the Union show as follows :—

	Miles.	Net earnings.	Dividend.
1871 . . .	44,600	£28,400,000	5½ per cent
1874 . . .	60,300	38,100,000	4½ „
1877 . . .	74,100	34,200,000	3½ „
1879 . . .	81,840	38,120,000	4 „

INSTRUCTION.

Next to immigration the greatest factor in the national progress has been popular instruction. Fifty years ago an English statist (Sir Rawson Rawson) predicted that the United States would become one of the greatest and most prosperous of nations, because they paid so much attention to the education of the masses. In 1831 the proportion of school-children to population was 15 per cent, or double the European average, and second only to Prussia. It would have been as high as 22 per cent, but for the slave-states, where the negroes were not educated. The census of 1870 showed that the ratio was now 19 per cent, being therefore ahead of the two foremost European countries in public instruction, namely Prussia and Scotland. Nevertheless, there are at present in the United States 4,528,000 persons over ten years of age unable to read or write, but they are doubtless negroes or foreign immigrants. The school returns show as follows for 141,630 schools :—

	Teachers.	Scholars.
Male . .	93,330	3,622,000
Female . .	127,710	3,588,000
	221,040	7,210,000

School revenue £19,080,000; of which £12,500,000 from lands, local taxes, etc., and £6,000,000 from fees.

The Press has materially aided the cause of enlightenment. In 1810 there were already 364 newspapers, although the Union had but eleven towns of more than 10,000 inhabitants. In 1828 there were existing 802 newspapers, including 50 daily, and the city of Philadelphia had no fewer than 51 printing-offices, some of them on such a scale that one publisher set up in type in one day the whole of one of Scott's three-volume novels. In 1871 the statistics of the Press showed:—

	Number.	Circulation.	Monthly.
Daily papers . . .	637	2,500,000	65,000,000
Weekly ,, . . .	4642	11,000,000	50,000,000
Magazines	891	7,500,000	8,000,000
	6170	21,000,000	123,000,000

No fewer than 57 papers are edited by women, and 300 are printed in German.

In public libraries the total is set down as 164,800 libraries with 45,500,000 books, but this includes 141,000 school libraries.

The real number of public libraries is probably under 20,000. In fact, there are but 30 libraries with more than 30,000 volumes each.

The growth of learned societies has been almost on a par with Great Britain, France, or Germany:—

1805 . . .	2	learned societies
1836 . . .	16	,, ,,
1878 . . .	49	,, ,,

In 1836 the total members of such societies numbered 5000 ; at present it is likely they count ten times as many. The principal of these societies are :—

Philosophical Society, founded by Franklin.
New York Academy of Science.
Franklin Institute, Philadelphia.
New England Historical Society.
American Association of Science (1848).
Society of Natural History, Boston.
St. Louis Academy of Science.
United States Astronomical Society.
Institutes of Civil and Mining Engineers.
Academy of Arts and Sciences, Boston.

Boston is par excellence the home of letters and sciences in the American continent, and has produced men whose names rank high in the literature and learning of the nineteenth century.

CHARITABLE INSTITUTIONS.

There are only fifty asylums for blind, deaf and dumb, and insane, but the number of persons so afflicted is so much lower than in Europe, that the above asylums are found amply sufficient. Insanity, meantime, is increasing almost as rapidly as in Europe, as appears from the census returns, viz.—

	No. of insane.	Ratio to population.
1850 . . .	31,397	1 in 738 inhab.
1860 . . .	42,864	1 ,, 733 ,,
1870 . . .	61,909	1 ,, 623 ,,

The present ratio is about the same as in Germany (see page 100), and much lower than in the United Kingdom. The city of New York is remarkable for an excessive rate of suicide, the average being 1 in 10,000 inhabit-

ants annually; but only one-fourth of the cases are American.

PAPER MONEY AND BANKS.

Washington emitted the first American paper money to pay his army in 1775, and called the notes "bills of credit." They passed the same as silver dollars for more than a year, but fell to 25 cents in 1778, to 5 cents in 1779, and to 2½ in 1780. Then Congress ordered the whole amount to be redeemed at a cost of 3,000,000 (£600,000). A further amount of 6,000,000 was subsequently redeemed at one cent per dollar, but 74,000,000 were never presented.

The first United States bank was established at Philadelphia in 1790, with a capital of £2,000,000 sterling, having several branches. Its charter expired in 1811, and it was succeeded in 1816 by a bank with the same title, having a capital of £7,000,000 sterling, of which the Government subscribed for one-fifth. This second bank incurred the mistrust, or (as some say) the hostility, of President Jackson, on account of electoral intrigues in discounts. The Government moneys were withdrawn in 1833, and the bank collapsed four years later. Meantime, numerous State banks had been established, viz.—

	No. of banks.	Capital.	Emission.	Specie.	Deposits.
1801 .	33	£7,000,000	...	...	...
1811 .	88	11,000,000	£6,000,000	£3,000,000	...
1836 .	689	50,000,000	28,000,000	8,000,000	10,000,000

This last year was known as the epoch of the "Wildcat" banks, and on May the 10th, 1837, all the banks in New York suspended specie payments, for which an Act of the Legislature was obtained, and in a few weeks all the banks in the United States had to suspend in like man-

ner. Nevertheless, gold did not rise above 16 per cent premium.

A second shock in 1839 caused, if possible, still greater disaster, and completely paralysed trade for some time. Eight of the States repudiated their public debts. At last matters began to improve in 1842.

A second general suspension of specie payments was caused in 1861 by the Civil War. The Government was forced to emit "greenbacks" to pay the army, and these notes so rapidly depreciated that, in 1864, gold was at 200 per cent premium, three greenbacks being equivalent to one silver dollar.

The quotations of this currency were :—

January 1862	greenback worth	97	cents
July 1864	,, ,,	35	,,
,, 1867	,, ,,	75	,,
,, 1876	,, ,,	96	,,
December 1878	,, ,,	100	,,

The emission in recent years has averaged £140,000,000 sterling, the Government having given charters to hundreds of banks to emit greenbacks on the security of United States bonds deposited with the Treasury. The report for 1874 shows that these so-called National Banks were 1976 in number, with an aggregate capital of £100,000,000, and a paper-money circulation of £71,000,000, irrespective of a further amount of £76,000,000 emitted directly by the Treasury. Besides the above banks, there are State banks holding charters not from the Federal Government, but from State legislatures. The greatest banking business is done at New York, where the aggregate deposits exceed £40,000,000 sterling.

The returns of banks for the last fifty years show as follow :—

Average.	No. of banks.	Capital paid up.	Emission.
1829 to 1839	835	£53,000,000	£21,000,000
1840 to 1850	765	43,000,000	22,000,000
1851 to 1861	1490	81,000,000	41,000,000
1862 to 1878	3100	100,000,000	70,000,000

Besides the above banks, which emit paper money convertible for gold on demand (since 1878), there are also 666 savings banks, and 2375 private banks without emission. The ordinary cash reserve of the banks is 22 per cent of their liabilities.

The evils of a fluctuating currency were severely felt until December 1878, when specie payments were resumed, and since then the country has entered on an era of great prosperity. It does not, however, appear proved that the paper-currency fluctuations had any connection with the rate of bankruptcies, the latter having increased during the years of least fluctuation, viz.—

		Failures.	Amount.	Average.
Annual average.	1872, 1873, 1874	5,030	£34,000,000	£6700 each
Annual average.	1875, 1876, 1877	8,530	39,000,000	4700 ,,
	1878	10,478	47,000,000	4500 ,,

During the last ten years the failures at New York averaged annually from 2 to 3 per cent of the number of merchants. Meantime a steady accumulation of wealth has been going on, for American capitalists are supposed to have bought up in Europe large quantities of United States bonds, to the amount of £200,000,000 sterling; but this also proves that capital could find no more remunerative investment. The amount of American bonds still held in Europe is said not to exceed £40,000,000. The total currency may be set down as £140,000,000 paper money,

or four times the amount of gold and silver. The export of bullion in recent years is largely in excess of imports, but it was not always so: take for comparison two periods, viz.—

	Imports.	Exports.
1821 to 1836 .	£26,500,000	£16,250,000
1866 to 1878 .	55,000,000	201,000,000

Fifty years ago the United States imported on an average £700,000 a year in specie more than they exported. At present they export annually £12,000,000[1] more than they import, notwithstanding the balance of trade so largely in their favour. Since 1848 the United States have produced £282,000,000 gold and £74,000,000 silver.

The coinage in circulation in 1840 was only £13,500,000, namely £9,100,000 gold, £4,300,000 silver, and £135,000 copper. From 1840 to 1871 the Mint emitted £212,000,000, two-thirds of which found its way to other countries, the actual amount of gold and silver coin being under £70,000,000.

REVENUE.

At the beginning of the century the revenue was £3,000,000 sterling, the public debt £16,500,000, the latter being a legacy of the War of Independence. Such was the surplus of revenue over expenditure that the debt had been reduced to £9,000,000 in 1812, when war again broke out with Great Britain. The cost of the war was an increase of £16,000,000 to the debt, to meet which an internal revenue was for the first time created in 1814, but practically abolished three years later.

[1] From 1860 to 1878 the United States exported £180,000,000 of bullion in excess of imports. In the same interval France imported £202,000,000 over exportation.

In 1830 the revenue consisted of £5,000,000 sterling, of which nine-tenths arose from Customs dues, the rest from the sale of public lands. The debt was brought below £1,000,000 in 1834, and may be said to have been at zero for four years.[1] It began to rise after 1838, and had reached £18,000,000 when the Civil War occurred in 1861. The maximum was attained in 1866, namely £555,000,000. After the close of the war it was resolved to pay off the debt as speedily as possible, out of extra revenue. Accordingly it was reduced to £395,000,000 in 1879, having been cut down one-fourth in ten years, at the rate of £14,000,000 per annum.

The taxation was, of course, raised to an extraordinary degree during the war, reaching £112,000,000 sterling in 1866, or eleven times the ordinary revenue before the war. The first internal revenue (1814) averaged £3,500,000 per annum, until its reduction in 1818. The second was created in 1862, and included income-tax, excise, etc. It was modified in 1866, and in its new form produced £44,000,000 annual average down to 1870, since which time it has been reduced one-half. At present the spirits duty gives £10,000,000, tobacco £8,000,000, and sundries £5,000,000, in all £23,000,000 yearly.

The total annual revenue of the United States has averaged as follows:—

1800 to 1810 . . .	£3,000,000
1811 to 1850 . . .	7,000,000
1851 to 1860 . . .	10,000,000
1861 to 1870 . . .	70,000,000
1871 to 1878 . . .	62,000,000

[1] In 1836 the Treasury had a surplus of 28,000,000 dollars, and there being no public debt the money was divided among the various States.

This, however, does not include local taxes, which have risen from £19,000,000 in 1860 to £56,000,000 since 1870.

Only a country of such wealth could support such heavy taxation with comparative ease. If we adopt Governor Tilden's statement on this subject, and compare taxes and income at previous periods, we find as follows, including all national and local taxes:—

Year.	Taxation.	National earnings.	Ratio.
1850 . . .	£16,600,000	£303,000,000	5½ p. c.
1860 . . .	30,800,000	687,000,000	4½ „
1876 . . .	146,000,000	1,449,000,000	10 „

The incidence of taxation is now double what it was twenty years ago, the industries and people of the republic being unduly weighted for the sake of paying off the National Debt in a single generation. At the present rate of reduction it is supposed the National Debt will be all paid off by the close of the century.[1] The total debt is summed up thus:—

National Debt . .	£395,000,000
State Debts . . .	70,000,000
Municipal Debts . .	56,000,000
Total	£521,000,000.

WEALTH OF UNITED STATES.

The actual value of the great republic is the same as that of France, namely, 6½ milliards sterling, or one-fourth less than Great Britain.

	Capital.	Income.	Ratio.
Agricultural . .	£2,224,000,000	£535,000,000	24 p. c.
General and commercial	4,135,000,000	914,000,000	22 „
	£6,359,000,000	£1,449,000,000	23 p. c.

[1] Supposing the amount saved in interest be applied to the redemption.

This shows £145 capital and £33 income per inhabitant, the former being only two-thirds of the average wealth in Great Britain, but the income being exactly on a par with our own. No other country in the world derives so enormous an interest for agricultural capital, the rate being double the European average. Moreover, the limitless tracts of land that are still available show that in the beginning of the next century the agricultural resources are likely to be three or four times what they are at present. The wealth of the United States has quadrupled in less than thirty years, and multiplied sixteen-fold in the memory of persons still living.

	Wealth.	Per inhab.
1820	£376,000,000	£39
1850	1,427,000,000	61
1879	6,359,000,000	145

The increase of wealth since 1850 would suffice to buy up the whole German Empire, with its farms, cities, banks, shipping, manufactures, etc. The annual accumulation has been £165,000,000, and therefore each decade adds more to the wealth of the United States than the capital value of Italy or Spain. Riches are more evenly divided than in Europe; few are very rich, fewer still indigent. The income-tax returns of 1866 showed as follows (without expressing the approximate amount):—

Incomes.	Persons.	Approximate amount.
Over £600 a year . . .	50,700	£194,000,000
Between £100 and £600 . .	719,000	252,000,000
Under £100 a year . . .	6,010,000	380,000,000
	6,779,700	£826,000,000

This gave an average income of £120, and as the census of 1860 showed £105 for every family in the Union, it

would appear that the income-tax omitted about 500,000 persons too poor for taxation, who would have brought down the general income to £110 per family.

American industry and population increase much faster than in Europe, and so does the wealth of the nation. Every day that the sun rises upon the American people it sees an addition of £500,000 sterling to the accumulated wealth of the republic, which is equal to one-third of the daily accumulation of mankind.

APPENDIX.

Page 3.

Prussian statistics show that Jews live longer than Christians, the death-rate of infants among the former being, moreover, 11 per cent less than in the general population. The Jewish people at present number as follows :—

Russia	2,621,000
Austria	1,375,000
Germany	512,000
United Kingdom	50,000
Holland	70,000
France	49,000
Italy	35,000
America	1,300,000
Asia	200,000
Africa	80,000
Total	6,292,000

Page 3.

The estimate of Russian death-rate here given must have been based on an exceptional year; the figures given in page 362 are probably nearer the fact, in view of the increase of population.

Pages 3 and 4.

The following Table shows the excess of male infants born, and the ratio of illegitimacy in the various countries :—

	Excess of Male Infants.	Rate of Illegitimacy.
United Kingdom	43 per 1000	50 per 1000
Switzerland	44 ,,	45 ,,
Holland	50 ,,	35 ,,
Sweden	48 ,,	110 ,,
Prussia	50 ,,	80 ,,
France	50 ,,	76 ,,
Belgium	55 ,,	70 ,,
Spain	65 ,,	55 ,,
Russia	30 ,,	35 ,,
Austria	63 ,,	126 ,,
Italy	65 ,,	66 ,,
Hungary	60 ,,	68 ,,

PAGE 4.

Wagner's census shows as follows :—

	1861.	1872.	Increase.
Males .	125,521,000	147,918,000	18 per cent
Females .	127,365,000	151,246,000	19 „
Total .	252,886,000	299,164,000	18½ „

PAGE 4.

The principal nations of Europe stand thus :—

	Population.	Males to 100 females.
United Kingdom . .	34,530,000	94½
France	37,202,000	99
Germany . . .	44,864,000	96
Russia	77,745,000	99
Austria-Hungary . .	38,078,000	96
Italy	28,677,000	101
Spain and Portugal .	21,611,000	98
Belgium and Holland .	9,381,000	99
Scandinavia . . .	8,548,000	95
Turkey, Greece, etc. .	20,000,000	...
	320,636,000	

PAGE 4.

The marriage-rate of nations (except England) is stated by Sig. Bodio as follows :—

	Marriages per 1000 inhab.	Under 20 years. Males.	Females.	Over 20 years. Males.	Females.
England . .	17	8 p. c.	22 p. c.	92 p. c.	78 p. c.
France . .	16	2 „	20 „	98 „	80 „
Prussia . .	18	1 „	12 „	99 „	88 „
Austria . .	19	1 „	17 „	99 „	83 „
Italy . .	15	1 „	17 „	99 „	83 „
Low Countries	16	2 „	10 „	98 „	90 „
Sweden . .	13	...	5 „	100 „	95 „

The marriage-rate in Scotland is 14, and in Ireland only 10 per 1000, but the Irish registers are supposed to be imperfect. The ages for England are taken from the Registrar-General's report, and should read "under 21," "over 21."

PAGE 7.

Professor Kolb's death-rate for various countries is as follows, in every 1000 inhabitants, per annum :—

Age.	England.	France.	Prussia.	Italy.	Sweden.
5 to 10	8	9	9	11½	8
10 to 20	5	7	5	7	4
20 to 30	8	13	9	10	6
30 to 40	13	12	12	12	8
40 to 50	17	14	16	15	12

PAGE 9.

The list in page 9 includes all losses, of which the number slain on the field is not always the greatest. The following Table shows how much more bloody were Napoleon's battles than the combat of Sadowa, wherein the needle-gun was first used :—

	Number engaged.	Hors-de-combat.	Ratio.
Marengo	58,000	13,000	22 per cent
Austerlitz	170,000	23,000	13 ,,
Jena	200,000	34,000	17 ,,
Borodino	250,000	80,000	32 ,,
Sadowa	400,000	33,000	8 ,,

PAGE 12.

The following Table shows the average prices of wheat for fifty years :—

Per bushel.	England.	France.	Prussia.	Austria.	Hungary.	Russia.	N. Y.
1821-30	7s. 6d.	5s. 5d.	4s. 1d.	3s. 1d.	2s. 5d.	3s. 11d.	5s.
1831-40	7s.	5s. 7d.	3s. 10d.	3s. 2d.	2s. 8d.	3s. 8d.	6s. 4d.
1841-50	6s. 8d.	5s. 9d.	4s. 8d.	4s.	3s. 7d.	3s. 6d.	5s. 10d.
1851-60	6s. 10d.	6s. 6d.	5s. 10d.	6s. 1d.	5s. 3d.	5s. 5d.	8s. 4d.
1861-70	6s. 6d.	6s. 3d.	5s. 8d.	7s. 6d.	5s. 7d.	5s. 8d.	6s.

PAGE 13.

Omission.—In 1878 India exported 13,000,000 bushels.

PAGE 18.

The wine countries of Europe are as follow :—

	Acres of vines.	Yield, gallons.	Per acre.
France	5,250,000	1,100,000,000	210 gallons
Italy	4,620,000	660,000,000	145 ,,
Spain	3,500,000	260,000,000	75 ,,
Portugal	474,000	132,000,000	270 ,,
Germany	304,000	90,000,000	300 ,,
Austria	2,000,000	375,000,000	190 ,,
Russia	20,000	2,000,000	100 ,,
	16,168,000	2,619,000,000	165 ,,

PAGE 19.

Sugar was first brought to Europe by the Moors in the 12th century.

PAGE 22.

Denmark also produces 28,000 tons per annum.

PAGE 23.

Spade tillage produces 140 per cent more than the plough, but costs four times as much.

PAGE 24.

The wheat crop of the various countries averages as follows:—

	Per acre.	Per 100 inhab.
United Kingdom	28 bushels	270
France	16 „	620
Germany	23 „	330
Russia	7 „	215
Austria	15 „	240
Italy	13 „	495
Spain	14 „	490
Low Countries	24 „	260
Denmark	30 „	250
Australia	14 „	1140
New Zealand	31 „	3220
United States	13 „	880
India	11 „	90

PAGE 24.

The transfer of land is much less expensive in Germany than in most other countries, being as $1\frac{1}{2}$ per cent of the value, against 6 per cent in France, and 7 per cent in Belgium.

PAGE 25.

The farm-stock of all nations is shown thus, the value being in millions sterling, and 000's omitted under each column of farm-stock:—

	Horned cattle.	Horses.	Sheep.	Pigs.	Value.	Per inhab.
Russia . . .	28,000,	20,000,	64,000,	7,000,	£356	£5
United States .	33,500,	12,500,	38,000,	35,000,	355	8
River Plate . .	18,850,	6,150,	76,000,	1,200,	41	15
Germany . .	15,800,	3,360,	25,200,	7,300,	219	5
Austria . .	13,133,	3,757,	21,418,	7,200,	200	5
France . . .	11,315,	3,033,	23,674,	4,000,	210	6
United Kingdom .	9,912,	2,866,	32,174,	3,390,	240	7
Australia . .	7,403,	1,010,	61,066,	815,	26	10
Scandinavia . .	4,553,	965,	4,997,	809,	69	8
Italy	3,490,	950,	7,150,	1,470,	53	2
Spain and Portugal	2,023,	670,	16,417,	1,858,	48	2½
Canada . .	2,702,	866,	3,331,	1,425,	33	8
Low Countries .	2,708,	543,	1,527,	970,	60	7
South Africa .	1,329,	241,	11,280,	...	5	5
	154,718,	56,911,	386,234,	72,437	£1,915	5½

PAGE 26.

Mr. Jeula also shows from Lloyd's register that years of maximum sun-spots are attended with 14 per cent extra of shipwrecks.

PAGE 28.

Sir Hector Hay, in his examination before the House of Commons, estimated the production of precious metals from 1852 to 1875 as follows:—

Gold . . .	£572,195,000
Silver . . .	241,890,000
	£814,085,000

This agrees with the estimates in page 28.

PAGE 28.

According to Humboldt's estimates in 1803, and others carried down to 1848, the yield of Spanish America from 1521 down to the discovery of gold in California was as follows, in millions sterling:—

	Before 1803.	From 1803 to 1848.	Total.
Mexico . . .	£406	£164	£570
Peru and Chile .	482	168	650
Brazil . . .	171	19	190
Venezuela, etc. .	82	46	128
	£1141	£397	£1538

The above total was distributed thus :—

	Before 1803.	From 1803 to 1848.	Total.
Gold . . .	£301	£142	£443
Silver . . .	840	255	1095
Millions sterling	£1141	£397	£1538

Page 29.

The annual production of precious metals at different epochs in the present century is shown as follows :—

	Gold.	Silver.	Ratio of gold to silver.
1801 . . .	19 tons	856 tons	1 to 45
1846 . . .	42 „	727 „	1 to 17
1850 . . .	134 „	978 „	1 to 7
1852 . . .	242 „	1027 „	1 to 4
1879 . . .	90 „	1060 „	1 to 12

The actual production of precious metals is estimated thus:—

	Gold.	Silver.	Total.
United States . .	£5,000,000	£6,000,000	£11,000,000
Australia	3,000,000	...	3,000,000
Siberia, etc. . . .	4,000,000	...	4,000,000
Spanish America .	...	3,000,000	3,000,000
	£12,000,000	£9,000,000	£21,000,000

Page 32.

Hian Tsung, Emperor of China, issued paper-money A.D. 807.

Page 32.

The first bank is now said to have been at Barcelona. The Bank of England was founded by a Scotch clergyman, Rev. William Patterson, in 1694 ; the founder died in extreme misery.

Page 38.

At the beginning of 1879 the principal banks of Europe stood thus, in millions sterling :—

	Capital.	Emission.	Specie reserve.
Bank of England	£14½	£32½	£35½
Bank of France	7½	92	83
Bank of Germany	6½	29	24
Bank of Austria	11	29	15
Bank of Belgium	3	12	4
	£42½	£194½	£161½

PAGE 41.

The principal industries of mankind are shown thus, in millions sterling :—

	Agriculture.	Manufactures.	Commerce.	Total.	Per inhabit.
United Kingdom	£265	£665	£601	£1,531	£46
France	380	416	368	1,164	32
Germany	340	286	319	945	22
Russia	370	166	128	664	8
Austria	263	130	160	553	15
Italy	142	42	98	282	10
Spain and Portugal	130	72	39	241	11
Low Countries	75	117	275	467	48
Scandinavia	78	20	65	163	20
	£2,043	1,914	2,053	£6,010	£20
United States	535	846	225	1,606	36
South America	62	30	91	183	7
British Colonies	87	20	147	254	32
	£2,727	£2,810	£2,516	£8,053	£21

The British Colonies do not include more than Australia, Canada, and South Africa.

PAGE 44.

Savings banks returns for 1860 and 1878 compare as follows :—

	1860.	1878.	Annual increase.
United Kingdom	£41,285,000	£74,640,000	£1,850,000
France	13,543,000	40,430,000	1,500,000
Germany	16,320,000	76,580,000	3,350,000
Austria	28,170,000	79,150,000	2,840,000
Italy	13,925,000	28,094,000	780,000
Scandinavia	4,912,000	21,305,000	890,000
Switzerland	5,276,000	11,581,000	350,000
Low Countries	1,730,000	6,550,000	260,000
Russia	1,052,000	3,100,000	110,000
Europe	£126,213,000	£341,430,000	£11,930,000

Thus the working classes alone have accumulated £215,000,000 sterling in eighteen years, or £12,000,000 sterling per annum.

PAGE 45.

The inventor of Life Insurance was Thomas Allan, Bishop of Oxford, 1706.

PAGE 45.

Bankruptcies have been increasing in recent years even faster than trade.

	United Kingdom.	United States.
1870 and 1871 . .	8,157 per annum	3,233 per annum.
1876 and 1877 . .	11,048 „	8,957 „

The failures in Great Britain between 1870 and 1875 amounted to £111,000,000, assets £33,000,000; say 30 per cent; but in some cases the creditors only received 2d. in the £. Some estates take a lifetime to wind up: for example, on Nov. 19, 1879, the creditors of Messrs. Perkins and Mullens, who failed in London in 1847, received a final dividend of 3½d. after thirty-two years' delay. In France, likewise, failures are becoming more frequent, and giving less dividends, *e.g.*—

	Failures.	Dividends.
1840 to 1850 . .	3480 per annum	31 per cent average
1861 to 1870 . .	5120 „	21 „ „

The failures in the United States (see page 520) amounted, in 1878, to £47,000,000, or an average of £4500 for each failure; while those of Canada reached £2,000,000, or about £3600 each bankrupt.

PAGE 46.

In the total of South American trade is included that of Mexico, but the trade of South America proper is only £91,000,000, as shown in page 472.

PAGE 46.

The principal articles that compose the trade of the world have grown as follows:—

	1830.	1878.	Increase.
Articles of food . .	£41,000,000	£310,000,000	650 p. c.
Cotton and wool .	11,000,000	101,000,000	820 „
Textile fabrics . .	45,000,000	166,000,000	270 „
Coal, timber, hardware	6,000,000	86,000,000	1330 „
Sundries . . .	62,000,000	659,000,000	960 „
	£165,000,000	£1,322,000,000	730 „

Page 51.

The first steamer is supposed to have been that constructed by Blas de Garay, at Barcelona in the year 1543, called the "Santissima Trinidad." The second was that of Symington and Miller, in 1787, the engine of which is shown at the Kensington Museum. The third was that of James Ramsay, an American, which made several trips on the Thames, at four miles an hour, in 1793. The fourth was the "Charlotte Dundas," in March 1802, which towed canal-boats on the Clyde, being the first ever used for commerce. The fifth was Robert Fulton's "Clermont," on the Hudson, in 1807, being the first regular passenger steamer. After the "Savannah" the most remarkable in ocean navigation was the "Enterprise," in 1825, which made the voyage to India, 13,700 miles, in 113 days. The "Great Western" of Bristol and "Sirius" of Cork, in 1837, which crossed the Atlantic at the same time, are often incorrectly alluded to as the first ocean steamers.

Page 54.

Dr. Gillies says that the Pharos of Alexandria, built by Ptolemy Soter, was 450 feet high, the light being visible 100 miles. In modern times the most famous lighthouses have been:—

1*st.* Tour de Cordouan, at the mouth of the Gironde, 186 feet high, begun in 1584 and completed in 1611. It is one of the finest works of the kind, and was the first to use a revolving light.

2*d.* Eddystone, off Plymouth Sound, built by Smeaton in 1756-59; 10 miles from shore.

3*d.* Bell Rock, in the Firth of Tay, built by Stevenson in 1807-10; it is 11 miles from shore. Coal-fires were used in many English lighthouses down to 1810.

Page 56.

The cotton manufactures of Belgium and Holland are here over-estimated, and do not exceed £8,000,000.

Page 57.

The importation of wool into Europe has increased by one-third since 1871.

	1871.	1878.	Increase.
From Australia . .	567,000 bales	791,000 bales	40 p. c.
„ River Plate .	222,000 „	267,000 „	20 „
„ Cape Colony .	149,000 „	164,000 „	10 „
Total . .	938,000 „	1,222,000 „	32 „

PAGE 70.

The Missouri mines are said to be at present producing over 50,000 tons of lead.

Zinc is produced by Prussia on a larger scale than in any other part of the world, the production having multiplied 15-fold since 1830. There are 77 mines, worked by 11,000 miners, who raise 350,000 tons ore per annum, worth £1 per ton. The ore gives 17 per cent zinc, that is 58,000 tons.

PAGE 78.

The new railways through the Alps will render comparatively unnecessary the hospices of the friendly monks of St. Bernard and St. Gothard. The returns of travellers crossing the Alps by the best-known passes are as follow :—

St. Gothard . .	65,000 per ann.
Splugen . .	28,000 „
Simplon . .	27,500 „

The monks of St. Gothard give hospitality to 17,500 travellers per annum.

PAGE 79.

The Birkenhead tunnel will supply the place of the steam ferry-boats, which at present carry 20,000,000 passengers yearly.

PAGE 79.

The Suez Canal, 92 miles in length, cost only £105 per yard, as compared with £200 for the Mont Cenis Tunnel, £500 for the London Metropolitan Railway, and £1100 per yard for the Thames Tunnel.

PAGE 85.

The only land cable of any note is that over the Andes, 30 miles in length, during the laying of which in 1871-72 Mr. Clark and his men were five months snowed up in huts near the Cumbre of Uspallata.

Page 86.

Since the British Government purchased the telegraph lines of the United Kingdom the traffic has almost doubled, the number of messages transmitted being as follows :—

	1871.	1877.	Increase.
England .	9,650,000	17,960,000	84 per cent
Ireland .	800,000	1,560,000	95 ,,
Scotland .	1,310,000	2,460,000	86 ,,
	11,760,000	21,980,000	85 ,,

Page 91.

The oldest existing newspaper is the *Pekin Record*, which recently completed its tenth century. If there had been "special correspondents" in the early period of that paper, we might recur to its files for an account of the Battle of Hastings, or of the coronation of Manco Capac, the first of the Incas, at Cuzco.

Page 97.

In many countries the hospitals and asylums are under the direction of Sœurs de Charité, who render valuable services to suffering humanity. It has been my fortune to meet with some of their institutions in the snows of the Andes, in the forests of Brazil, and amid the Arab tribes in Barbary.

Page 101.

In the report of the Hanwell Asylum, Middlesex, it is stated: —"We believe the increase of insanity is due, in great measure, to drugged gin and drugged beer."

Page 110.

Mr. R. Giffen sums up the wealth and annual profits of the United Kingdom thus, in millions sterling :—

	Capital.	Income.
Lands . . .	£2010	£67
Houses . . .	1420	95
Railways . . .	650	26
Mines, foundries .	89	22½
Foreign loans, etc. .	1032	68½
Public Companies, etc.	3347	205½
	£8548	£484½

Mr. Giffen's estimates of capital agree with those of M. Leroy Beaulieu, and the above returns of earnings are apparently based on income-tax returns. The total earnings of the British nation may be briefly summed up thus :—

Subject to Income-tax	£579 millions
Exempt from „ „	106 „
Earnings of working classes . . .	430 „
	£1115 „

Page 111.

The Insurance returns show as follows, in millions sterling :—

	England.	Scotland.	Ireland.	Total.
1801 .	£220	£4	£9	£233
1821 .	381	14	13	408
1841 .	606	45	31	682
1868 .	1504	99	52	1655
1872 .	...	...	...	1900

The annual payments for premium average £7,000,000, or about 3½ per £1000.

Page 113.

Professor Levi estimates the earnings of the working classes at £420,000,000 per annum.

Page 116.

The Clearing-house of New York is less than that of London, the former averaging only £14,000,000 daily in 1878 ; but in 1868 it averaged £19,200,000.

Page 116.

Sir J. Lubbock estimates that 97 per cent of our transactions are done by means of bills or cheques, 2½ per cent of bank notes, and ½ per cent coin.

Page 117.

As an instance of thrift on the part of operatives, Mr. Pease stated that 268 miners in his colliery deposited in one year (1872) the sum of £3900 in bank.

Page 119.

The secrets of England's greatness, according to Mr. Mundella, are :—

1. The abundance of coal and iron.
2. Our insular situation.
3. A climate suitable for work.
4. Cheapness and abundance of money.
5. Superiority of English workmen.
6. Our merchant shipping.
7. Our colonial possessions.
8. Free trade.

Page 119.

The following Table shows the progress of the United Kingdom since 1801 :—

(From 1801 to 1879.)

Year.	Population.	Commerce per head.	Taxation.	National Debt.
1801	16,302,410	£4 4 0	£3 9 3	£34 0 0
1811	18,532,522	2 10 0	4 3 0	38 0 0
1821	21,300,573	3 9 0	2 8 9	40 0 0
1831	24,423,588	4 10 0	1 18 8	33 0 0
1841	27,077,095	6 3 0	1 16 5	29 0 0
1851	27,764,034	8 5 0	1 16 3	28 0 0
1861	29,358,927	12 10 0	2 9 8	28 0 0
1871	31,914,985	20 4 0	2 3 0	26 0 0
1879	34,150,000	17 18 6	2 8 0	23 0 0

Page 119.

British expenditure on wars :—

	Date.	Amount.
William III. . . .	1688-97	£32,500,000
Against Spain . . .	1702-63	182,000,000
„ United States .	1776-85	97,500,000
„ France . .	1793-1815	831,400,000
Kaffir, Chinese, etc. . .	1838-53	6,000,000
Crimean	1854-56	69,400,000
Second Chinese . .	...	6,500,000
Zulu war . . .	1879	4,500,000
		£1,229,800,000

The cost of Indian and Affghan wars is not included.

Page 120.

The extremes reached by Consols since 1800 have been as follows :—

Lowest.		Highest.	
1803	50¼	1817	84¼
1821	68¾	1824	96⅞
1831	74⅞	1838	95¼
1847	78¾	1852	102
1866	84⅝	1867	96⅜
1872	91¼	1879	100

The National Debt reached its maximum in 1817, namely £916,000,000, having risen £373,000,000 from 1801.

PAGE 121.

The police-force of the United Kingdom is shown as follows :—

	Force.	Annual cost.	Per man.
England	30,000	£2,900,000	£97
Ireland	12,500	1,183,000	95
Scotland	3,350	283,000	85
	45,850	£4,366,000	£95

PAGE 121.

The valuation of London in 1879 had risen to £25,055,000.

PAGE 122.

The number of paupers in the United Kingdom declined 23 per cent in ten years, but the sum expended for their maintenance has nevertheless increased, viz.—

	England.	Scotland.	Ireland.	Total.
Number in 1867	1,034,800	129,000	72,900	1,206,700
„ 1877	742,700	96,400	85,500	924,600
Decrease	29 p. c.	decr. 25 p. c.	incr. 17 p. c.	decr. 23 p.c.
Cost in 1867	£6,960,000	£808,000	£797,000	£8,565,000
„ 1877	7,400,000	859,000	1,018,500	9,277,500
Increase	6 p. c.	6½ p. c.	27 p. c.	8 p. c.

PAGE 124.

The progress of agriculture in Scotland since 1855 is shown as follows :—

	1855.	1876	Increase.
Acres under crops .	1,996,000	2,085,000	4½ p. c.
Number of cattle .	975,000	1,133,000	16 „
„ of sheep. .	5,695,000	6,990,000	23 „

Three-fourths of Scotland is held by 583 owners, one-half being the property of 49 persons, and there are 21 landed estates which comprise one-fourth of the kingdom.

Page 127.

The depression of farming interests is shown by the number of farmers who have failed in England in the last few years :—

1870 .	229	1877 .	477
1875 .	354	1878 .	815
1876 .	480	1879 .	1228

The average rental for Ireland on Professor Caird's estimate of £14,000,000 is 50 per cent over the income-tax returns. The income-tax Table for the three kingdoms, in 1876, showed as follows :—

England . . .	£50,220,000	27s. per acre
Scotland . . .	7,505,000	7s. 6d. „
Ireland . . .	9,290,000	9s. 4d. „

The value of land, from 1866 to 1876, rose 8 per cent in England, 10 per cent in Scotland, and 1½ per cent in Ireland.

Page 134.

The following abstract is taken from the published price of wheat for seventy-eight years :—

	Average.	Maximum.	Minimum.
1800 to 1825	81s. 8d.	126s. 6d. in 1812	44s. 7d. in 1822
1826 to 1850	56s. 4d.	70s. 8d. in 1839	39s. 4d. in 1835
1851 to 1877	52s. 5d.	74s. 8d. in 1855	38s. 6d. in 1851
1800 to 1877	62s. 4d.	126s. 6d. in 1812	38s. 6d. in 1851

Page 138.

There has been happily a decline in 1879, viz.—

	Value of liquor.	Per inhabitant.
1868	£113,465,000	74 shillings
1876	147,289,000	90 „
1879	128,144,000	75 „

Page 142.

The ratio of persons enjoying the right to vote is much larger in other countries than in the United Kingdom.

United Kingdom	.	9 per cent of pop.	
Germany .	.	21	,, ,,
Spain .	.	23	,, ,,
Switzerland	.	24	,, ,,
France .	.	27	,, ,,

Of persons actually enrolled on the registers the ratio of those who vote is as follows:—18 per cent in Sweden, 41 in Prussia, 50 in Switzerland, 53 in Spain, 54 in Italy, 66 in Portugal, 72 in France, and 84 per cent in Belgium.

Page 145.

The importation of raw cotton and of wool into the United Kingdom since 1801 has been, in millions of lbs., as follows:—

	Cotton.	Wool.
1801 .	54	7¼
1811 .	90	4½
1821 .	137	17
1831 .	273	32
1841 .	437	56
1851 .	645	70
1861 .	959	93
1871 .	1,416	188
1877 .	1,186	223

Page 147.

The production of flax in Ireland reached its maximum in 1864, and has since declined, but is now again rising—

1864 . . .	64,500 tons
1874 . . .	18,100 ,,
1878 . . .	24,500 ,,

Linen-damask industry is chiefly indebted to a Carlow peasant named James Quinn, who, in 1712, wrought a table-cloth representing the castle of Carlow. As he kept his cottage closed while doing the work, he was supposed to be engaged in necromancy, and the neighbours were about to throw him and his wife into the river Barrow, when they were saved by the parish priest. In 1713 the Linen Board of Ireland established the damask school at Lurgan, under Quinn's direction.

PAGE 149.

One of the most remarkable of the new articles of manufacture is Alkali, chiefly made on the Tyne, which showed an export of 4200 tons in 1840, and 198,000 tons in 1870. The value exported in the years 1873-78 averaged £2,400,000 per annum.

PAGE 150.

The production of coal in Great Britain has risen as follows :—

Year.	Tons.
1660	2,150,000
1700	2,610,000
1750	4,774,000
1800	10,080,000
1829	16,035,000
1846	36,400,000
1853	54,000,000
1860	84,000,000
1870	110,000,000
1876	133,000,000

PAGE 152.

Our production of lead ore has varied from 70,000 tons to 100,000 for years—the value being on an average of a score of years £1,250,000 annually.

PAGE 155.

It is difficult to understand how certain rapid journeys were made before the use of steamers or railways. The *Annual Register* of March 1802 mentions that Mr. Hunter travelled from Paris to London in 22 hours, in fulfilment of a wager.

PAGE 168.

In 1850 the principal societies had the following number of members :—

Royal	830	Horticultural	1500
British Association	2300	Pharmaceutical	3000
Statistical	450	Archæological	2000
Royal Geographical	750	Antiquaries	570

Geological . . .	620	Society of Arts .	830
Botanical . . .	1260	Law Association . .	1370
Zoological . . .	2000	Medical	580

Some of the above have since doubled their numbers, the Statistical now counting 880 members.

PAGE 170.

Dr. Lawson Tait gives the following hospital data:—

Founded.	Hospital.	Annual admission.	Deaths, 1861-70.	Deaths, 1871-75.
1547	St. Bartholomew's	5500	11 per cent	5 per cent
1548	St. Thomas's	3200	11 „	12 „
1722	Guy's	5600	10 „	9½ „
1735	Bristol	2600	5½ „	...
1736	Edinburgh	4500	11 „	10 „
1739	Aberdeen	2100	6¼ „	6½ „
1753	Manchester	3000	11 „	10¾ „
1767	Leeds	3000	8¼ „	6¾ „
1778	Birmingham	2700	8½ „	8 „
1794	Glasgow	5700	10½ „	11 „
...	London (fever)	3000	17 „	15 „
...	Liverpool	3000	6 „	7¼ „

PAGE 174.

London has spent £10,600,000 in constructing docks, besides £5,000,000 on bridges.

PAGE 180.

IMPORTS OF BRITISH COLONIES.

Imported into	1868.	1877.	Increase.
India . . .	£47,481,000	£48,877,000	3 per cent
Straits and Ceylon	11,964,000	19,005,000	58 „
Australia . .	31,566,000	48,308,000	51 „
Canada . .	16,200,000	22,228,000	38 „
Mauritius . .	2,200,000	2,360,000	7 „
Hong Kong .	3,200,000	3,200,000	...
South Africa .	3,352,000	8,135,000	143 „
West Indies .	4,638,000	5,904,000	28 „
Guiana . .	1,618,000	2,230,000	38 „
Gibraltar and Malta	8,223,000	7,991,000	...
Falklands and Feejee	20,000	140,000	600 „
	£130,462,000	£168,378,000	...
Less bullion	19,126,000	17,560,000	...
	£111,336,000	£150,818,000	36 „

EXPORTS OF BRITISH COLONIES.

Exported from	1868.	1877.	Increase.
India . . .	£52,446,000	£65,044,000	25 per cent.
Australia . .	33,256,000	45,384,000	36 ,,
Canada . . .	12,882,000	17,233,000	35 ,,
Singapore and Ceylon	10,873,000	17,934,000	65 ,,
Gibraltar and Malta	9,454,000	8,542,000	...
West Indies . .	5,082,000	6,087,000	20 ,,
South Africa . .	3,767,000	5,996,000	57 ,,
Hong-Kong . .	1,560,000	2,042,000	32 ,,
Mauritius . .	2,339,000	4,201,000	81 ,,
Guiana . . .	2,232,000	3,049,000	36 ,,
Feejees and Falklands	13,000	143,000	1000 ,,
	£133,904,000	£175,655,000	32 ,,

GROSS INCREASE OF NINE YEARS.

	Imports and Exports.		Increase.
India . . .	£100,000,000	£114,000,000	14 per cent
Australia . .	65,000,000	94,000,000	45 ,,
Canada . . .	29,000,000	40,000,000	38 ,,
Singapore and Ceylon	23,000,000	37,000,000	61 ,,
West Indies . .	10,000,000	12,000,000	20 ,,
South Africa . .	7,000,000	14,000,000	100 ,,
Mauritius . .	4,500,000	6,500,000	45 ,,
Guiana . .	4,000,000	5,250,000	31 ,,
Other colonies .	2,500,000	3,250,000	28 ,,
	£245,000,000	£326,000,000	33 ,,

PAGE 187.

In some of the colonies, sheep are boiled down in thousands for grease, and cattle are unsaleable; but all kinds of stock must sooner or later rise.

PAGE 214.

This is for Canada proper, not including Nova Scotia, etc., and gives a ratio of 23 per cent of population.

PAGE 225.

India exported 13,000,000 bushels wheat in 1878, and has at present 19,300,000 acres under wheat.

PAGE 226.

In the year 1877 there were 19,695 persons killed in India by wild animals and venomous snakes, 46 being killed by elephants, 819 by tigers, 200 by leopards, 85 by bears, 564 by wolves, 24 by hyenas, 1180 by other wild beasts, and 16,777 by snakes. The numbers killed in the two preceding years were 19,273 and 21,391 respectively.

PAGE 231.

The number of slaves and sums paid for them to their masters in August 1838 were as follow :—

	Number.	Price.	Per head.
Jamaica . .	311,000	£6,150,000	£20
Barbadoes, etc. .	276,400	6,122,000	22
Guiana . .	82,600	4,295,000	52
Mauritius . .	66,613	1,670,000	25
Cape Colony .	33,842	1,763,000	50
	770,455	£20,000,000	£26

PAGE 261.

Although France has almost doubled in wealth in the last fifty years, the number of paupers receiving public relief forms an increasing percentage.

	Paupers.		
1833 to 1837 average,	751,000 per annum, or	2¼	p. c. of population.
1848 to 1852 „	982,000 „	2¾	„
1860 to 1870 „	1,150,000 „	3	„

The proportion is still relatively small, as the provident character of the people in a measure prevents poverty.

PAGE 262.

The rente-holders in France have increased as follows :—

	Holders of rentes.	Average income.
1830 . . .	195,370	£41 each.
1840 . . .	265,447	30 „
1850 . . .	846,330	10 „
1860 . . .	1,073,801	13 „
1870 . . .	1,254,040	11 „
1877 . . .	4,404,763	7 „

The depositors in savings banks on December 31, 1877, numbered 2,863,300, and in December 1878 rose to 3,050,000.

PAGE 262.

The value of state properties in France was in 1841 over £512,000,000 sterling, and is still probably equal to half the National Debt.

PAGE 313.

"In the eighth century, when Englishmen knew no more than Robin Hood about mechanical arts, the city of Ghent was famous for its manufactures, and Charlemagne sent a present of valuable textures from its looms to Haroun-al-Raschid."

PAGE 321.

The Stadtholder's Palace at Amsterdam is built on 13,000 piles.

PAGE 329.

The Old Dutch East India Company, founded in 1602, had a capital of only £650,000; but it grew so rapidly in wealth and power, that it conquered empires, and maintained 200 vessels in the Chinese trade.

In 1621 was founded the West India Company, which in fifteen years fitted out no fewer than 800 vessels, took Brazil from the Portuguese, colonised the Cape of Good Hope, and captured 545 Spanish and Portuguese vessels, with booty worth £7,500,000.

PAGE 362.

The population includes that of Asiatic Russia.

PAGE 417.

The Italian report for Instruction shows as follows:—

	Pupils.
Primary schools	1,307,000
Evening schools	164,000
Regimental schools	89,000
Latin schools	53,000
18 Universities	26,000
	1,639,000

The vote for primary schools averages £670,000 per annum.

PAGE 424.

The number of Gypsies in Europe is set forth as follows :—

Danubian Principalities . .	200,000
Austria-Hungary	97,000
Spain	45,000
England	18,000
Norway, etc. etc. . . .	10,000
	370,000

PAGE 438.

Spain has ten banks, with an aggregate capital of £2,200,000. The Bank of Spain has sole right of emission, limit £4,000,000, with a paid-up capital of £1,200,000.

PAGE 461.

The Suez Canal returns during nine years summed up the following total :—

	Number.	Fees.
British vessels .	8007	£6,032,000
French „ . .	741	710,000
Dutch „ . .	363	325,000
Austrian „ . .	482	267,000
Italian „ . .	443	222,000
Various „ . .	952	486,000
	10,988	£8,042,000

PAGE 491.

The increase of population in the United States has been as follows :—

	Whites.	Free coloured.	Slaves.	Total.
1810 . . .	5,862,000	186,000	1,192,000	7,240,000
1840 . . .	14,196,000	386,000	2,487,000	17,069,000
1860 . . .	26,923,000	488,000	3,954,000	31,443,000
1870 . . .	33,589,000	4,880,000	...	38,558,000

PAGE 494.

The United States Government has granted, up to the present, 192,000,000 acres for railway concessions, and 70,000,000 acres for schools.

PAGE 512.

The value of petroleum exported down to 1878 was £101,000,000.

PAGE 513.

The United States Government has expended since 1789 the sum of £89,300,000 on roads, docks, canals, railway subsidies, lighthouses, and public buildings.

PAGE 519.

In December 1878 the banks of the Union showed thus:—

	Number.	Capital.	Deposits.
National . . .	2056	£95,000,000	£134,000,000
Others	4400	41,000,000	250,000,000
Total . .	6456	£136,000,000	£384,000,000

RECORD OF PROGRESS.

1801. First railway bill passed; Wandsworth and Croydon.
1802. Trevithick and Vivian's patent for running coaches by steam.
1803. Slavery abolished in the Danish West Indian islands.
1805. Life-buoy invented by John Edwards, London.
1807. First passenger steamboat; between New York and Albany.
1808. National schools in England, founded by Bell and Lancaster.
1809. Fire-escape ladder patented by Mr. Davies, England.
1810. Emancipation of serfs in Prussia; Stein's measure.
1811. Abolition of slave trade, Wilberforce's Bill passed.
1812. London the first city lighted with gas.
1813. Howard's patent for refining sugar.
1814. *Times* newspaper printed by steam.
1815. Safety lamp invented by Sir Humphrey Davy.
1817. Hosking's steam pump for mines.

1818. Brunel's patent for subterranean or submarine tunnels.
1819. American steamer Savannah from New York, first to cross Atlantic.
1820. Ruthven's lithographic press invented at Edinburgh.
1821. Rocket apparatus for saving life from shipwreck.
1822. Babbage's calculating machine patented.
1824. Mechanics' Institutes established in England.
1825. First passenger railway in the world, Stockton and Darlington, opened.
1826. Fire brigade formed in London under Mr. Braidwood.
1827. Omnibuses tried in London. Emancipation of Greece.
1828. Neilson's hot-blast for smelting iron.
1829. Emancipation of Catholics in the United Kingdom.
1830. First overland mail from India, brought by Lieutenant Waghorn.
1831. First meeting of British Association of Science.
1832. Reform of the British Parliament.
1834. Parliament votes £21,000,000 to redeem 770,000 West India slaves.
1835. Overland Route opened by Red Sea to India.
1836. Ericcson's propellor invented. Westley Richard's percussion muskets invented.
1837. Cook and Wheatstone's patent for electric telegraphs.
1838. Daguerre invents photographs or sun-portraits.
1839. First settlement in New Zealand.
1840. Sir Rowland Hill's penny postage introduced.
1841. Artesian well bored at Grenelle, near Paris.
1843. China thrown open to foreign trade.
1844. Gutta-percha, a new product from Malacca.
1845. Howe's sewing-machines patented in United States.
1846. Repeal of the Corn Laws.
1847. Chloroform introduced by Dr. Simpson.
1848. Gold found in California.
1849. Repeal of British Navigation Laws.
1850. First submarine cable; from Dover to Calais.
1851. Great Exhibition in Hyde Park, London.
1852. Gold found in Australia.
1853. Haarlem Lake pumped out.
1854. Commodore Perry, United States, opens Japan to trade.
1855. Bessemer's system of making steel.

1856. East Indian Company territories annexed to British Empire.
1857. Emancipation of Jews in Great Britain.
1858. Sound dues abolished by Denmark.
1859. Oil-springs in Pennsylvania.
1860. Cobden's commercial treaty with France.
1861. Emancipation of 44,000,000 serfs in Russia.
1862. Abolition of slavery in United States; 5,000,000 slaves liberated.
1863. Electric light first used at Havre lighthouse.
1864. Scheldt dues abolished.
1865. Zollverein removes obstacles to German trade.
1866. First Transatlantic cable, Ireland to Newfoundland.
1867. Mail-steamers commence running between San Francisco and China.
1868. Expulsion of the Tycoon. General reformation in Japan.
1869. Suez Canal opened. Pacific Railway completed.
1870. Mont Cenis tunnel completed.
1871. Balloons used to carry mails from Paris (besieged).
1874. Telephones patented by Gray of Chicago and Lacour of Copenhagen.
1875. Plimsoll's shipping reform.
1876. Graham Bell's speaking telephone.
1877. Phonograph invented by Professor Edison.
1878. Microphone invented by Professor Hughes.
1879. North-eastern passage made by Swedish steamer Vega.
1880. Dr. Siemens' electric railway proposed at Berlin.

INDEX.

ACCUMULATION of wealth in nations, 43
in United Kingdom, 112
in United States, 524
in Germany, 288
Adelaide, capital of South Australia, 196
Adults able to read in all countries, 1830-1879, 88
Africa, increase of railways in, 72
electric telegraphs, mileage, traffic, 85
South, trade, products, population, 215
diamond-fields, product since 1867, 217
Age, average of all living, various nations, 7
Agriculture of all nations, area, crops, capital, 24
of Austria-Hungary, 386
of Belgium, 310
of Brazil, 475
of Denmark, 353
of France, 240
of Germany, 267, 292, 298
of Holland, 322
of Italy, 407
of Norway, 349
of Ottoman Empire, 462
of Portugal, 450
of Russia, 367
of Spain, 426
of Sweden, 339
of United Kingdom, 123
of United States, 493
Alaska, sold by Russia to United States, 491
Alcohol, increase of consumption in Great Britain, 137, 541
Algeria, agriculture of, 263
roads, railways, commerce, 264
Alkali, increased production in England, 543
Allen, bishop of Oxford, invented life insurance, 534
Almaden quicksilver mines in Spain, 433
Alpine travellers, 536
Alsace, cotton-factories of, 273
Amazon navigation, 22,000 miles, 84
America, progress of railways, 72
telegraphs, mileage, traffic, 85
America, South, balance of trade for ten years, 473
banks, loans, English capital, 472
debt and taxation, 472
paper money, total issue, 36
railways, telegraphs, population, 471
trade with England declining, 159
American war, 1861-1865, number of slain, 9
amount of expenditure, 40
Americans and English, best fed, best workmen, 12
Andes, Peruvian, railways in the, 485
proposed railway from Mendoza to Chile, 77
snow cable laid across, 536
Anglo-Saxon race and language, 1
Angora goats in South Africa, 219
Annecy, highest bridge in the world, 82
Argentine Republic, banks, debt, commerce, 482
population, sheep-farms, etc., 479
Arkwright and Cartwright, machinery invented by, 145
Armaments, cost of, since 1848, 40
Arms, men for bearing, in various countries, 9
Army and navy, reduction of mortality, 7
Arragon, canal of, 437
Asia, progress of railways, 72
telegraphs, traffic, mileage, 85
Atholl, the planting Duke, 129
Auckland, capital of New Zealand, 200
Australia, agriculture and cattle, 186
banks, paper money, deposits, 190
commerce, debt, revenue, 189
gold, production since 1852, 28, 184
grain, exports of, 186
lands sold by Crown, 188
life average, longest in world, 186
population, increase of, 185
railways, telegraphs, schools, 192
wines of, 186, 193
wool exports since 1830, 187
Australia, South, agriculture, cattle, 197
Western, progress since 1829, 195
Austria-Hungary, agriculture, crops, cattle, 386
banks and paper money, 35, 401.

Austria-Hungary, births, deaths, increase, 385
canals and rivers, 83, 400
commerce since 1819, 397
debt and expenditure since 1840, 403
forests and the chase, 387, 391
instruction, progress since 1837, 400
land-owners, classes, number, 387
libraries and learned societies, 401
manufactures in 1834 and 1870, 391
minerals, increase since 1830, 394
navigation free, of Danube, 397
railways and highroads, 398
serfs, emancipation of, in 1849, 387
steamboat company, Lloyd's, 397

BADEN, agriculture, landed estates, products, 307
Balance of trade against United Kingdom since 1840, 156
of all nations for ten years, 47
Ballast entries, increase since steamers, 53
Baltimore tunnel for aqueduct, 79
and Pittsburg railway, 514
Bank, first in Europe, by Venetian Jews, 32, 532
deposits, United Kingdom, increase since 1850, 113
Banking in Great Britain, 1850 and 1879, 115
power of all nations, 37
Banks and paper money of the world, 33
principal, of Europe, 532
of Austria-Hungary, 401
of Belgium, 319
of Brazil, La Plata, 36, 476, 482
of Denmark, 359
of France, 259
of Germany, 284
of Holland, 330
of Italy, 418
of Japan, 468
of Portugal, 455
of Russia, 380
of Spain and Cuba, 438, 442
of Sweden, 346
of United States, 518
Bankruptcy of Austrian Empire, 1810 and 1814, 403
of Russia, 1843, 34
of United States, 1836, 518
returns for various countries, 45, 534
Barbadoes, rainfall and sugar-crop, 26
trade, population, schools, 236
Barrack sanitary reform by Dr. Farr, 7
Basque journal, *Irurac*, 92
Batavia trade with Holland, 322
Bateman's project of London water-supply, 176
Battles, mortality in, 529
Baxter, Dudley, on income of British nation, 113
Bavaria, agriculture, land-owners, 298
Bavaria, breweries, railways, revenue, 297
Beck and Pulteny, on wealth of England, 110
Bees in Austria, 390
in France, 244
in Germany, 271
in Russia, 374
Beer, consumption in all countries, 12, 18
Beet-root, effects in fattening cattle, 244
sugar, annual production in all countries, 19
Belfast, excessive death-rate in, 106
Belgium, agriculture, crops, cattle, 310
banks, mint, savings banks, 319
crime and pauperism, decrease of, 309
debt and finances, 320
grain deficit, annual imports, 311
instruction, schools, libraries, 318
land, subdivision of, 311
manufactures, increase since 1836, 315
married people, increase of ratio, 309
minerals, increased production since 1836, 313
population, increase since 1830, 309
railways, canals, telegraphs, 317
Bell and Lancaster's schools, 166
Bell Rock light, 535
Belmez coalfields in Spain, 433
Bequests, charitable, in Great Britain, France, Italy, 98
Berlin, high death-rate at, 6
Bessarabia, tillage, products, 464
Bessemer steel, production of, 148
rails, saving effected by, 77
Bilbao, production and export of iron ore, 433
Bills maturing daily in U. Kingdom, 116
Birkenhead tunnel under Mersey, 79, 536
Birmingham, taxes, debt, valuation, 121
increase of population, 149
Birth and death rates of nations, 3
of United Kingdom, ten years, 105
Black Sea, canal connecting with Caspian, 84
Blind, deaf, dumb, insane, of all nations, 100
Blindness in Spain, 425
Block's, M., Table of increase of nations, 2
Bohemian nobles, wealth of, 387
linen and glass factories, 392
Bokhara and Caspian railway project, 77
Bolivia, republic of, 486
Bondergods, tenant farms in Denmark, 353
Books, number annually printed in Europe, 91
English, increased export since 1830, 92
Boston, the Athens of America, 517
Boulton of Soho, on mechanical power, 62
Bower, Lieutenant, founds Tasmania, 1803, 194

Boyars, land-owners of Bessarabia, 464
Brain-power of all nations, in 1830 and 1880, 88
Brassey on English workmen, 142
Brazil, agriculture, coffee, sugar, 474
banks, commerce, finances, 476
railways, schools, charities, 477
yield of gold, 477, 531
Bremen, tobacco factories, 276
increase of trade, 280
Brenner Pass railway, elevation of, 78
Bridges, principal, built from 12th to 18th century, 80
iron, dimensions and cost of most notable, 81
Bridgewater's, Duke of, canal, 153
Brighton, low death-rate at, 106
"Britannia," quickest voyage across Atlantic, 52
British colonies in 1840 and 1880, 181
empire, increase since 1800, 104
Brown's suspension bridges in Scotland, 81
Brooklyn bridge, greatest in the world, 81
Brunel, constructor of Thames Tunnel, 79
Brunswick, first savings bank established at, 38
Buenos Ayres, sheep-farms, railways, settlers, 479
Building in Great Britain since 1805, 141
Bulgaria and Roumania, improved agriculture in, 463
Bullion, imports and exports of, in all countries, 31
of United Kingdom, amount estimated, 31
our transactions with other countries, 157
Butter and cheese, native and imported, Great Britain, 136
production in all nations, 22, 530

Cables, submarine, date, length, cost, 85
Cabot's chimney, Maine, removal of, 86
Caird, Professor, on agriculture, 126
Calais and Dover, projected tunnel, 80
Calcutta, Madras, and Bombay, universities of, 226
Caledonian Canal, "Neptune's Staircase," 84
California annexed to United States, 491
canals for irrigation, 84
gold product of, 28
vineyards, yield of, 496
Camels for draught cattle, 374
Canada, agriculture, land-grants, grain-exports, 206
banking and wealth of colony, 212
commerce, increase in 40 years, 209
compared with Australia, 181
debt and taxes, increase since 1840, 212
emigration, British, to, since 1815, 204
fisheries, annual product of, 17
population, increase since 1810, 204
Canada, railways and canals, 78, 213
schools, newspapers, 214
Canal, Panamà, project of, 83
Suez, length, cost, traffic, 82, 461, 548
Canals and rivers of Europe, 83
of Canada, 213
of France, 256
of Germany, 282
of India, 224
of Low Countries, 317, 326
of Russia, 367, 379
of United Kingdom, 153
of United States, 512
Canary Islands, products, trade, 443
Cape Colony, agriculture, goats, ostrich farming, 218
births, deaths, immigration, 216
commerce, increase in ten years, 219
diamonds, value since 1867, 217
revenue, debt, railways, 220
Capital and debt of all nations, 42
new, raised in Great Britain, 111
of great banks of Europe, 533
rural, of all nations, 25
Cargoes, sea-borne, value per ton, 53
Carrier pigeons for telegrams, 91
Carrying trade of world, 51
Cartwright's loom, reward paid for, 145
Caspian Sea, fisheries of, 17
Catalan wine, exports of, 429
Catherine's, Empress, paper money, 33
Catherine of Lancaster's sheep, 431
Cattle of all nations, table of, 531
Great Britain, in 1869 and 1879, 129
Ireland, increase since 1841, 132
Cavour canal in Lombardy, 418
Census of 1871, United Kingdom, ages and sexes, 109
Centenarians, more women than men, 8
Cerro Pasco silver mines, in Peru, 485
Ceylon, coffee-planting, cinchona, 227
Chadwick on preventible sickness, 8
Chalkley's bridge at Freyburg, 81
Charitable asylums of Great Britain, 170
bequests in England, France, Italy, 98
Charities, amount spent on, 169
Cheapness of money in England, 38
Cheese and butter, native and imported, Great Britain, 136
Chelsea Hospital, failure of silkworms, 148
Cheques and bills, 97 per cent of trade done by, 538
Cherbourg harbour and docks, 82
Cherokee tongue, newspaper in, 92
Chestnuts, consumption in France and Italy, 16
Chevalier Michel on British manufactures, 144
on gold and silver, 15th century, 27
Childbed, deaths in, average for Europe, 8
excessive rate in Russia, 371
Children, average to each marriage, various countries, 5

Chile, trade, railways, schools, 483
China, canals, coal-fields, exports, 469
Chincha Islands, guano, 485
Chinese Imperial library, 93
Cholera, deaths in Europe, in four epidemics, 10
Cholos, a tribe in Bolivia, 21
Cinchona plantations in India, 227
Cincinnati, pork-packing and exportation, 505
Cities of England, debt, taxation, 121
United Kingdom, death-rate in, 106
Clark's notes on Russia, 361
Clearing-house, London, increase since 1839, 116
New York, returns of, 538
"Clermont," first passenger steamer on the Hudson, 535
Cleveland, richest iron district in England, 69
Clock-making by steam, 456
Clyde dock-walls, cost of, 82
shipbuilding, tonnage, value, 63, 163
Coal, output per miner in all countries, 68
production of the world, 68
of Great Britain, 68, 151, 543
Coalbrookdale, first iron bridge in England, 80
Cobden's treaty, effect of, 252
Coburg-Saxe, agriculture, products, 308
Coca-leaves, stimulant used by Indians, 21
Cochineal, production in Canary Islands, 444
Cockerill's foundries in various countries, 61
Cocoa, increased consumption in Great Britain, 21
plantations in Trinidad, 234
Cod-fishery of Canada, annual product, 17
Coffee-planting in Brazil, 475
in Ceylon, 227
in Java, 332
in Manilla, 446
in Porto Rico, 442
in Venezuela, 489
Coffee, production and consumption in the world, 19, 21
Coinage in all countries since 1848, 29
Coleridge on education, 166
Colonies, British, and possessions, growth of, 180
shipping and commerce, increase of, 161, 181
debt and revenue, 41, 181
issue of paper money, 37
Commerce of all nations, 1830 and 1878, 45
of Austria-Hungary since 1819, 397
of Belgium since 1831, 316
of British Colonies since 1840, 181
of China, 469
of France since 1826, 252
of Germany since 1840, 280
of Holland since 1849, 328
of Italy since 1865, 416
Commerce of Portugal since 1820, 449
of Russia since 1820, 364
of Scandinavia since 1850, 334
of South America, 472
of Spain since 1850, 434
of United Kingdom since 1816, 156
of United States, 502
Consols, British, prices since 1800, 120, 540
number of holders diminishing, 120
Cook and Wheatstone's telegraph, 84
Coolies in colonies, 228, 234, 237, 440
Co-operative societies in United Kingdom, 118
in Germany, 288
Copper production in the world, 69
Cordoba, English lead-factory at, 70, 488
Cork, Ireland, high death-rate at, 106
Cornwall, tin and lead mines, 70
Cossacks, military land-grants to, 370
Cottiers in Belgium, 310
in Denmark, 356
in France, 241
in Germany, 293
in Ireland, 124
in Persia, 470
in Portugal, 452
in Turkey, 465
Cotton, consumption in the world, 57
factories of world, spindles and operatives, 57
imports since 1810 into Great Britain, 542
exports from United States, 495
manufactures of Austria-Hungary, 392
of Belgium, 315
of France since 1820, 247
of Germany, 273
of Great Britain, 145
of Holland, 326
of Italy, 413
of Russia, 377
of Spain, 432
of United States, 508
production in the world, 145
Cousins, intermarriage of, in G. Britain, 4
Credit Foncier of France, 259
Crimean war, cost of, 40
number of slain, 9
Crime and ignorance, decrease of, in England, 89, 167
in France, 240
in Italy, 407
in United States, 493
in all countries, 103
Crops, average in United Kingdom, ten years, 125
Crown forests. See Forests.
Crown lands in Australia, 188
in Canada, 208
in Cape Colony, 218
in Ceylon, 227
in Egypt, 465
in Germany, 293, 298, 301, 305, 307

Crown lands in Greece, 459
in Jamaica, 233
in Natal, 221
in Russia, 370
Cuba, sugar, tobacco, decline of industry, 440
Cyprus, agriculture, products, population, 230

Daimios of Japan, wealth of, 466
Dairy products of various countries, 22
of United Kingdom, 136
Dalrymple's wheat farm, Dakotah, 499
Danish West India Islands, 353
Danube, free navigation of, 397
Darby's bridge over Severn, 81
Darmstadt, agriculture, land-owners, 308
Davy's, Sir Humphrey, safety lamp, 549
Deaf, dumb, blind, and insane of all countries, 100
in United Kingdom, 173
Death-rate and price of wheat, 134
of countries of Europe, 3
of infants in various countries, 363
of United Kingdom, town and country, 106
of working-classes, excessive, 8
of principal cities in Europe, 6
Debt of all nations, increasing, 40
compared with capital, 42
of Great Britain, reduction since 1817, 119
of United States, reduction since 1866, 522
Deepest coal-mines in the world, 68
Denmark, agriculture, land-tenure, 353
births, deaths, increase of population, 333
banks and finances, 359
commerce, balance of trade, 359
debt, revenue, national wealth, 335
emancipation of bondsmen, 353
land, high price of, 356
manufactures, railways, canals, 352
Deposits and discounts, banking, of Great Britain, 115
in savings banks of all countries, 38
Desmond, Countess of, longevity of, 8
Diamonds of South Africa, value produced, 217
Dispensaries of Great Britain for the sick poor, 171
Dividends on banks in U. Kingdom, 115
on railways of all nations, 74
Docks and harbours of Great Britain, 82
Don flax-field, greatest in the world, 373
Douro, bridge over, 81
Dublin, highest death-rate in United Kingdom, 106
tonnage of entries, 165
water-supply, 175
"Dundas" steamer on the Clyde, 535
Dundee linen manufactures, 147
Dutch East India Company, 547
Dykes in Holland, cost, dimensions, 321

Eads's great bridge at St. Louis, U.S., 81
Earnings of British nation since 1820, 112
of railways of all nations, 74
East India Company, 222
Ecuador, republic of, 489
Edinburgh, low death-rate in, 106
to London in 14 days, 153
water and gas supply, 175, 177
Eddystone lighthouse, 535
Eggs, statistics respecting, 22, 271
Egypt, see Ottoman Empire, 460
Eiffel's bridge over the Douro, 81
Electric light at British Museum, 177
railway, proposed at Berlin, 78
telegraph, returns for all countries, 85
Elephants, price of, 223
Elevated railway of New York, 78
Emigrants from Europe since 1820, 10
from Germany to Brazil, 474
from Italy to S. America, 407
to British Colonies since 1815, 183
to United States, 491
Encumbered estates, Ireland, sales, 130
in Portugal, 454
in Prussia, 269
in Russia, 368
in Sweden, 340
Engel's returns of locomotives in the world, 76
England, Bank of, progress since 1850, 113
rates of interest since 1694, 116
English and Americans, best fed, best workmen, 12
English workmen, efficiency of, 66, 142
Enskilda banks of Sweden, 346
Entries of shipping in ports of world, 51
ratio of steamers, 52
ratio of vessels in ballast, 53
Epirus and Thessaly, agriculture of, 462
Erie canal, construction, cost, traffic, 512
Estates, number of, and area, in all countries, 24
in United Kingdom, area, 123, 127
confiscated in France, value of, 240
Eucalyptus plantations in Algeria, 264
Euphrates Valley railway project, 461
Europe, growth of railways in, 72
imports of grain, 14
navigable rivers and canals, 83
population of, 528
principal banks, capital, issue, 533
taxes and debt of all countries, 39, 41
trade returns, 1830 and 1878, 45
statistics of pauperism, 96
Expenses, working, on railways of all countries, 74
Exports and imports, British, 156, 161
of the world, 46

Famines and epidemics, losses by, 10
Farm-stock of all nations, 530
Farmers, failures of, since 1870, 541

Farr, Dr., on death-rate and price of wheat, 134
reduction of mortality in barracks, 7
February, greatest number of births in, 3
Fellahs, tenant-farmers of Egypt, 465
Females, increase of ratio in Europe, 4
preponderance of, in Scotland, 105
Finances and debt of all countries, 39
of Austria-Hungary, 403
of Belgium, 319
of France, 261
of Germany, 287
of Greece, 458
of Holland, 331
of Italy, 419
of Japan, 468
of Portugal, 454
of Russia, 382
of Scandinavia, 335, 348, 360
of South America, 471
of Spain, 437
of Turkey and Egypt, 462
of the United Kingdom, 119
of United States, 521
Fire brigades of various cities, 177
Fires in Paris and London, 178
in Russia, 371
Fire insurance. See Insurance.
Fisheries of all nations, 17
of Canada, 210
of France, 253
of Great Britain, 165
of Norway and Sweden, 338, 349
Fixity of tenure in Russia, 24
Flax cultivation in Russia, 373
crop in Ireland, 542
production and consumption of the world, 59
Florida annexed to the United States, 491
Food and wages in Great Britain, 142
compared in all countries, 65
Food supply of Great Britain, 133
of all nations, 11
Forests of the world, extent, products, 26
of France, 244.
of Germany, 296, 299, 303, 305
of Great Britain, 129
of Russia, 367, 374
of Sweden and Norway, 340, 349
Foundries British, in other countries, 61
France, agriculture, crops, 240
banks, coin, paper money, 31, 34, 259
best cultivated country in Europe, 23
birth-rate declining since 1817, 239
canals, mileage, cost, traffic, 256
coal, production and imports, 250
colonies (see Algeria), 263
commerce, increase since 1826, 252
crime, decrease of, 240
crops, increase since 1800, 242
debt, taxes, increase since 1830, 261
estates confiscated, value of, 240
fishery returns in 1850 and 1878, 254
food, increased consumption of, 14
grain deficits and importation, 242
France, insanity and suicide, increase of, 239
instruction, progress since 1830, 257
interest, bank rate of, 33 years, 38
iron, production since 1820, 251
libraries, learned societies, press, 258
landed proprietors, classes, area held by, 241
male population compared with Germany, 9
manufactures, increase since 1842, 246
minerals and metals, 250
navy, mercantile, decline of, 253
phylloxera, ravages of, 243
railways, roads, bridges, 254
rural population, decline since 1850, 241
rural property, increase since 1824, 245
silk, cotton, woollen, linen industries, 246
state properties, value of, 547
sugar-mills, distilleries, breweries, 249
taxation and debt, general and local, 261
telegraphs, mileage and traffic, 86
war, Franco-German, cost of, 261
war indemnity loan, how subscribed, 262
waste lands reclaimed since 1848, 244
wealth and earnings of nation, 261
wine-crops since 1820, 243
Free-trade, its effects on commerce, 534
Friendly Societies of all nations, 67.
Fulton's steamer on the Hudson, 535

Gaelic newspaper published in Canada, 92
Game statistics in various countries, 272, 338, 374, 387, 391
Garay invented steamboat, 16th century, 535
Gas statistics of chief cities in world, 177
German colonists in Brazil, 474
Germany, agriculture, area, crops, 267, 292, 298, 301, 305
banks and paper money, 35, 284
births, deaths, increase of population, 265
canals and rivers, 282
cattle, increase since 1840, 271
coal, production since 1805, 278
commerce, increase since 1840, 280
debt and taxation, 289
emancipation of serfs, 1810, 267
emigration since 1840, 265
encumbered estates, sale of, 269
foundries, iron, Krupp's factory, 277
grain deficit, importation, 275
interest, bank-rate for 33 years, 38
land-owners, number, area held by, 267
manufactures, operatives, produ[illegible] 273

Germany, mining industries, increase since 1846, 279
railways, traffic increase in, 281
schools, libraries, societies, 283
silver demonetised, amount sold, 30
sugar-mills, breweries, 275
tonnage of entries and mercantile navy, 286
trade with G. Britain, increase of, 159
Ghent, ancient manufacturing centre, 547
Ghilan, silk industries of, in Persia, 470
Giffen on wealth of Britain, 110, 538
Gilbert, Dr., on intemperance and insanity, 139
Gillot's steel pens at Birmingham, 62
Glasgow, high death-rate at, 106
water and gas supply, 175, 177
Glove-making in France, 248
Gold and silver, coined and uncoined, 1848-1878, 29
fall in value since 1848, 29
imports and exports, all countries, 31
increase since 15th century, 27
production in all countries, 28, 532
wear and tear, annual, 30
Gold-diggers' earnings in California and Australia, 28
Goods traffic on railways of the world, 74
Gotha canal, in Sweden, 338
Grain, bushels per acre, in all countries, 24
consumption in all nations, per head, 12
crops of the world, 24
increased consumption since 1820, 14
prices since 1820, 529, 541
imports of Belgium, 312
of France since 1800, 242
of Germany, 275
of Great Britain since 1811, 126
of Greece, 459
of Holland, 324
of Italy, 409
of Portugal, 450
exports of Algeria, 263
of Australia, 186
of Austria-Hungary, 389, 394
of Buenos Ayres, 480
of Canada, 208
of Chile, 13
of Denmark, 357
of India, 225, 545
of Japan, 467
of Russia, 372
of Spain, 427
of Turkey and Egypt, 460
of United States, 496
Grand Trunk Railway, Canada, 213
Grattoni, constructor of Mont Cenis tunnel, 79
Great Britain, agriculture of. See Agriculture.[1]

[1] e manner for banks, commerce, etc

"Great Eastern," largest vessel afloat, 64
Greece, agriculture, land-owners, 459
balance of trade for ten years, 458
Greenbacks, United States, amount and value, 1862-1880, 34
Guano, Peru, shipments since 1840, 485
Guardia Civil, rural police of Spain, 424
Guiana, sugar-plantations, trade of, 237
Gustavus Adolphus a collector of books, 338
Gypsies, number in Europe, 548

HAARLEM Lake drained by English Company, 327
Hafiz' poems in Persian schools, 470
Hamburg, increase of trade, 280
harbour and light charges at, 54
Hancock on Irish wealth, 133
Harbour charges on vessels at various ports, 54
Harbours and docks of Great Britain, 82
Hardware industry, British, 1820 and 1878, 148
Hausmann's works at Paris, 261
Havana, trade of, 440
Hay, Sir Hector, on precious metals, 531
Heathcote, inventor of machinery for lace, 59
Helder canal, in Holland, 326
Herrings, number taken yearly, 17
Hian-Tsung, inventor of paper money, 532
Hidalgos of Spain, number of, 423
Highroads of Algeria, 263
of Austria-Hungary, 399
of Canada, 214
of France, 255
of Germany, 282
of India, 224
of Turkey, 465
of United Kingdom, length and cost, 155
of United States, 512
Ho's Chinese version of Shakespeare, 92
Hobart-town, capital of Tasmania, 195
Hogs killed in United States, 497
Holland, agriculture, cattle, cheese, grain, 322
banks and finances, 330
births, deaths, increase, 321
canals, cost, traffic, Trekshuyts, 326
commerce, increase in thirty years, 328
colony of Java, products of, 332
debt, taxation, foreign loans, 331
dykes or polders, cost, dimensions, 321
entries, Dutch and foreign, 329
fisheries, decline of, 325
flowers, value of exports of, 324
grain deficit, importation, 324
instruction, progress since 1835, 330
manufactures, sugar, gin, textiles, 325
railways, roads, dykes, 328
shipping, increase since 1837, 329

Holland, trading companies of, 547
transit trade with Germany, 329
Homestead land-grants in Canada, 207
in United States, 493
in Algeria, 263
Honduras, colony of, decline of, 236
Hong-Kong, trade increase since 1867, 227
Hops, cultivation in France, 244
in Bavaria, 270
in United States, 495
Horses, number in United Kingdom, 128
returns for all countries, 531
Hospitals, death-rate of, English and foreign, 170
of Great Britain, 171, 544
of all countries, 97
House property of United Kingdom, 537
Howard's improvements in hospitals, 170
Hovedgards, estates in Denmark, 353
Howell on labour and capital, 143
Hudson and Erie canal, United States, 512
first passenger steamer upon, 535
Humboldt on precious metals, 531
Hungary. See Austria, 384
Husbands under age, commonest in England, 6
Hygiene in hospitals, 97

ICELAND, habits of people, 335
Idle persons, small[1] number in Great Britain, 109
Idria quicksilver mines in Austria, 395
Ignorance and crime, connection of, 89, 167
Illegitimate births, of all nations, 527
declining in Great Britain, 108
increasing in France and Sweden, 3
Illinois Railway, freight of grain, 14
Imports of Great Britain, surplus, 156
of the world, over exports, 46
Imports and exports of Great Britain, summary of, 156, 160
of all nations, ten years, 47
Imports of wheat, since 1810, 134
Income and capital of all nations, 42
of France. See Finances.[1]
of United Kingdom, 110
Income-tax returns, United Kingdom, since 1815, 110
Increase of nations, Block's Table of, 2
of commerce since 1830, 45
of shipping, 50
of gold and silver, 28
of paper money, 33
of debts and taxes, 39
of lighthouses, 54
of iron and steel, 61
of coal, 68
of suicide, 102
of railways since 1830, 72
of schools since 1830, 88
of newspapers since 1840, 90
of British colonies since 1840, 181
Increase of wealth of all nations, 43
Independence, War of, cost to United States, 491
India, agricultural products, increase of, 225
annexations since 1830, 223
banks and paper money, 37, 225
bullion, amount absorbed since 1840, 30
canals of Bengal, Jumna, etc., 224
commerce, increase since 1815, 225
debt and taxes, increase since 1814, 226
exportation of grain, 545
garrison, British, strength, cost, 226
irrigation works, sum expended on, 224
imports and exports, summary of, 225
railways, mileage, cost, traffic, 73, 224
roads and public works, since 1830, 224
wild beasts, number of persons killed by, 546
Indiarubber, export from Brazil, 474
Indian tribes in Canada, schools, etc., 205
population in United States, of all classes, 492
Industries of all nations, 533
Infant mortality in various countries, 363
in United Kingdom, 108
Insanity, causes of, and ratio in all countries, 100
highest rate in Ireland, 101
Instruction, adults able to read, 1830-1878, 87
costs less than pauperism, 122
diminishes crime and pauperism, 89
expenditure in all countries, 89
progress in United Kingdom since 1835, 166
ratio of school children in all countries, 88
Insurance, fire, in Great Britain, returns since 1815, 111
fire and life, in Canada, 212
life, returns for principal nations, 45
Intemperance increasing in G. Britain, 139
principal cause of insanity, 101
reduces span of life, 139
Interest, Bank of England rates for 182 years, 116
in England, France, Germany, 33 years, 38
Ireland, absentee landlords, area of estates, 131
agricultural decline since 1868, 132
bank accumulations since 1860, 133
births, deaths, rate of increase, 105
cattle, increase since 1840, 132
charities, income of, 170
emigrants, average for ten years, 107
encumbered estates, sale of, 130
famine of 1847, number of victims
farmers-tenant and landlords,

[1] In like manner for Germany, Russia, etc.

Ireland. grain, annual importation of, 132
hospitals, lowest death-rate in world, 171
improved condition since 1841, 130
income, average per inhabitant, 122
insane and blind, excessive ratio of, 100
instruction, progress since 1830, 87
lands reclaimed since 1841, 131
landed proprietors, number, income, 127, 131
linen trade, causes of decline, 59, 146
mortality in principal cities, 106
savings banks, increase of deposits, 117
taxation, incidence of, 122
wealth, annual increase of, since 1860, 133
iron, increased production in all countries, 61
iron, production in Austria-Hungary, 394
in Belgium since 1836, 314
in France since 1820, 251
in Germany since 1830, 278
in Great Britain since 1800, 152
in Italy, 414
in Russia since 1842, 376
in Spain, 433
in Sweden since 1812, 344
in United States since 1840, 511
iron vessels, number built, cost per ton, 63
bridges, list of principal, 81
ratio per inhabitant in all countries, 69
Italy, agriculture, crops, rural population, 407
banks, paper money, savings banks, 36, 418
births, deaths, emigration, 406
charitable bequests, 98
canals of Ticino, Cavour, etc., 418
cheese, production in Lombardy, 410
commerce, increase since 1835, 415
debt and taxes, increase since 1820, 420
farming profits, Ridolfi's estimates, 409
grain imports during ten years, 409
instruction, libraries, museums, 416
irrigation, Po valley, value of land, 410
landed proprietors, number, area held by, 408
manufactures, revival since 1850, 412
minerals, sulphur, iron, marble, 413
railways, traffic, increase of, 417
shipping, increase of ten years, 416
silk, annual production, 414
vineyards, wine, and oil crops, 410
war of 1859, number slain, 9
war of 1866, cost of, 86

JAMAICA, sugar, negroes, revenue, 232
January, month of greatest mortality, 8
Japan, agriculture, rice crop, 466
commerce, railways, telegraphs, 467
paper money, banks, debt, newspapers, 468
Java, products of, 332
Jessop, constructor of first London docks, 82
Jewellers, consumption of gold and silver by, 30
Jews, first bankers in Europe, 32
great surplus of male births among, 3
small rate of illegitimacy among, 4
total number of, 527
Joint-stock banks in Great Britain, 114
Jonkoping wooden matches, Sweden, 343
Junnan, first iron bridge constructed, 80

KAFFIR industry and products, Natal, 221
Kane, Sir R., on Irish agriculture, 132
Khal-Khals, highlanders of Persia, 470
Khedive's estates in Egypt, 465
Kilsby tunnel, length and cost, 79
Knight, George, on paper duties, 168
Kolb on vital statistics, 529
Kongsberg, Sweden, silver mine, 344
Kremnitz gold mine, in Austria, 394
Krupp's factory at Essen, 277

LABOUR, waste of, in small farms, 23, 312
Lagrange on wheat-growing in France, 14
Lambert coal mine, Belgium, deepest in world, 68
Lancaster and Bell's national schools, 166
Lancaster's, Catherine of, dowry of sheep, 431
Land crisis in G. Britain, causes of, 127
cost of transfer, 530
dearest in Holland and Belgium, 25
proprietors of in all countries, 24
rise of, in England since 1801, 127
value of, in various countries, 25
value in United Kingdom, 541
Land-owners in Australia, 188, 201
in Austria-Hungary, 387
in Belgium, 310
in Canada, 207
in Denmark, 354
in France, 241
in Germany, 267, 270, 293
in Greece, 459
in Holland, 322
in Italy, 408
in Portugal, 450
in Russia, 370
in South Africa, 218
in Spain, 429
in Sweden and Norway, 340, 349
in Turkey, 463, 465
in U. Kingdom, 123, 127, 131
in United States, 498
Languages spoken in 1800 and 1880, 2

Languedoc canal, cost and details, 256
Lapland, herds of reindeer, 351
Lead, consumption of the world, 70
production in Great Britain, 152, 543
Learned societies of all countries, 94
of United Kingdom, 1803-1850, 168
Lease-holders of United Kingdom, 128
Leeds, taxes, debt, valuation, 121
Legacy returns in France and England, 43
since 1811 in England, 111
Leipzig fair, amount sold at, 304
Leroy Beaulieu on debt of G. Britain, 110
Lesseps, Baron, constructor of canals, 83, 461
Letters to each inhabitant, in all countries, 94
Levi, Professor, on wealth of Great Britain, 110
on earnings of working classes, 538
Liabilities of banks of Great Britain, 117
Libraries of all countries, increase since 1848, 92
of United Kingdom, increase since 1848, 167
of United States, 516
Library of Emperor of China, 93
Liege factories of fire-arms, 314
Life assurance, invented by Bishop of Oxford, 534
returns for principal countries, 45
Life, average of, in Europe, 7
Lifeboat association in Great Britain, 165
Lighthouses of the world in 1840 and 1878, 54, 535
Linen manufactures of Europe, 59
in United Kingdom, 146
damasks in Ireland, 542
Liquor, increased consumption in Great Britain, 137, 541
Live cattle from United States, 506
Liverpool, death-rate very high, 106
debt, taxes, valuation, 121
docks, area of, 82
shipping entries, tonnage of, 165
water and gas supply, 175, 177
Living, average age of all, in various countries, 7
Lloyd's Austrian Steamboat Co., 397
shipping register, summary extracted from, 54
Loans, British, to foreign countries, 537
Dutch, to European powers, 331, 382
British to South America, 472
raised in London since 1874, 114
French, to pay Germany, 262
Local taxation in Great Britain, increase of, 121
Locomotives, number of, in all countries, 62, 76
Lombardy, cheese, silk, irrigated lands of, 410, 414
London, banks, increase of, since 1850, 118
charitable institutions, cost of, 178
death-rate, steady decline of, 106, 174
London, docks of, 82, 174, 544
entries of shipping, 1801-1878, 174
food consumption of, 174
gas and water supply, 175
insurance returns, increase, 178
police and fire brigade, 177
taxes, debt, valuation, 121, 540
Longevity in England and other countries, 8
Losses in wars of nineteenth century, 9
in bankruptcy and bad loans, 45
Louisiana annexed to U. States, 491
Lowell, cotton factories, U.S., 509
Lubbock, Sir John, on bills, 538
Lunacy commissioners, report of, 172
Luxuries, consumption of, in all countries, 19
imports of, into Great Britain, 137
Lying-in hospitals, 171
Lyons, silk factories of, 247

Machinery and steam power of the world, 62
Madeira wine, utility of beet-root for, 312
Madison's protection-tariff in United States, 503
Madrid, enormous death-rate at, 6
Magdala gold-mine, depth of, 184
Magyar population in Hungary, 385
Mail-coaches of sixty years ago, 153, 155
Maize, average yield of, 15
Males, capable of bearing arms; various countries, 9
ratio of, declining in Europe, 4, 528
births of, surplus over females, 3, 527
Malt, consumption in U. Kingdom, 138
Manchester, high death-rate at, 106
taxes, debt, valuation, 121
water and gas supply, 175, 177
Mandeville on Chinese currency, 32
Mandioca, consumption in South America, 15
Manilla, trade, products, population, 446
Manitoba, prairies for wheat farming, 207
Mantals, divisions of land in Sweden, 341
Manufactures of Austria-Hungary, 391
of Belgium, 313
of France, 245
of Germany, 272
of Great Britain, 143
of Holland, 325
of Italy, 412
of Portugal, 448
of Russia, 375
of Spain, 431
of Sweden, 342
of United States, 506
of the world, general summary, 55
British supremacy in, 144
Maori race declining in New Zealand, 199
language, newspaper printed in, 92
Maple sugar in United States, 20
Marine insurance and losses, 166
Marriage-rate in Europe, 4, 527
in United Kingdom, 107

Married of various countries, 6
life longer than single, 8
life, average duration of, 5
Marrying, age for, in various countries, 5
Mauritius, trade, industry, 228
Mayr on crime and pauperism, 103
Meat, consumption in all countries, 12, 16
importation into Belgium, 312
into France, 243
into Great Britain, 136
exportation from Austria-Hungary, 391
from Canada, 209
from Denmark, 358
from Holland, 325
from Norway, 351
from Portugal, 452
from Sweden, 342
from United States, 497
Melbourne, city of, 202
Meldrum's notes on sun-spots, 26
Men, able-bodied, in United States, 9
Menai, great bridges at, 81
Mennonite colonies in Canada, 207
Merinoes in Australia, 188
in Russia, 374
in Saxony, 306
Messages, telegraphic, in all countries, 85
Metayer. See Cottiers.
Metropolitan railway of London, 78
Mexico, yield of silver, 531
Mikado's improvements in Japan, 466
Milch cows, number in U. Kingdom, 128
Minerals of the world, 67
of France. See France.[1]
of Great Britain, 150
Miners in all countries, product, output, death-rate, 71
in Great Britain, 152
Ming, Emperor of China, invented suspension bridges, 80
Minho valley, garden of Portugal, 451
Mints of various countries since 1848, 29, 116
Misericordia hospital, Rio Janeiro, 478
Mississippi steamboat traffic, 502
wheat-fields, 513
Missouri, lead-mines of, 70, 536
Mitchell's wheat farm, California, 498
Money, gold and silver coin, 29
paper-currency of all nations, 33
Mont Cenis tunnel, 79
railway, 78
Montevideo, trade and population of, 488
Montreal, increase since 1852, 205
facilities for sea-going ships, 213
Moorish coast, Spanish forts on, 439
Mortality on English railways, 154
on railways of all countries, 75
Mortgages, burthen of, in all countries, 27
Moscow rebuilt, described in 1824, 361
Moujiks, Russian, condition of, 371
Mundella on England's greatness, 538
Murabàs, tenant-farmers in Turkey, 465
Murder, ratio in various countries, 103
Myddelton's water-supply of London, 175

NAPOLEON wars, cost to G. Britain, 104
Natal, agriculture and population of, 221
Navigation, inland, of all countries, 83
Laws, injurious effect of, 161
Negro sugar-planters in West Indies, 20
Neilson's hot-blast, invented in 1828, 151
Neison's life-average for various countries, 7
for habitual drunkards, 139
Neuilly, bridge over Seine, 80
Nevada silver-mines, yield since 1862, 28
New Grenada, republic of, 489
New South Wales, progress since 1788, 192
New York clearing-house returns, 538
gas, water supply, police, fire brigade, 175, 177
elevated railway, 78
New Zealand, trade, finances, population, 198
Newspapers of the world, 1840 and 1880, 90
Niagara, remarkable bridges at, 81
Nijni-Novgorod, great annual fair, 377
North Sea canal, 327
Norway, agriculture, crops, cattle, 349
births, deaths, rate of increase, 333
commerce and shipping, 351
fisheries, annual yield of, 349
manufactures and minerals, 352
population, increase of, since 1830, 333
taxes and debt, lightness of, 352
wealth and income of people, 335
Nottingham lace manufacture, 59
Nugget, largest found in Australia, 28

OATMEAL, food of Manchester merchants, 153
Ocean cables, list of principal, 85
Oil, olive, production in Europe, 21
Ontario, agricultural progress of, 208
Operatives, British, superior skill of, 66
of all countries, statistics of, 55
hours of work in various countries, 66
food and wages of, 65
Opium exports from India, 225
Orange groves of Seville, 430
Oregon territory ceded to U. States, 491
Orloff's, Count, best horses in Russia, 374
Oroya railway, Peru, highest in the world, 78
Osoka-Nippo, chief newspaper in Japan, 92
Ostrich-farming in South Africa, 219
Ottawa, seat of Canadian legislature, 205

[1] In like manner, for Germany and other countries. See also Coal and Iron, under their respective titles.

Pacific railway of Canada, 214
of United States, 72, 78, 514
Palm and maple sugar, 20
Palmstruck founds Bank of Sweden, 37
Pampas, cattle farms of the, 16
Panamà canal, project of Lesseps, 83
Paper money of all nations, 32
duties repealed in 1861, 90
printing, consumption of, 90
Pará and Amazon steam-navigation, 84
Paraguay, republic of, 487
births of males preponderate, 3
yerba-mate or Jesuits' tea, 20
Paris, gas, water-supply, 175, 177
death-rate very low, 6
jewellers, consumption of gold, 30
Parr, Thomas, aet. 152, cause of his death, 8
Passenger traffic on railways of all countries, 74
death-rate on railways of all countries, 75
traffic in Great Britain in 1834 and 1873, 155
Pastoral industry of United Kingdom, 128
of France. See Agriculture.[1]
returns of all nations, 25
riches of America and Australia, 16
Patagonia, Welsh colony of Chubut, 481
Patterson founds Bank of England, 532
Pauperism and crime related, 103
Paupers in United Kingdom, 89, 103, 540
increase of, in France, 546
number of, in all countries, 96
on horseback in South America, 97
land-owners in France, 25
with firelocks in Spain, Italy, 96
Peabody's homes for working-classes, 173
Pearl-fishery of West Australia, 196
Pedro Segundo railway, Brazil, 78, 477
Pekin journal, ninth century, 537
Pelham hotel, Boston, removal of, 86
Perry's, Comm., treaty with Japan, 466
Persia, people, trade, silk-culture, 470
provinces ceded to Russia, 362
Perth, capital of Western Australia, 196
Peru, republic of, 484
yield of silver, 531
Pesth, bridge over Danube, 81
Petroleum, production and exportation, 512, 549
Petty on Dutch shipping, 329
Philadelphia, fire-brigade, police, 177
first bank in United States, 518
Philip, Captain, first Australian settler, 183
Philippine Islands, trade, products, population, 445
Phylloxera, ravages of, in France, 243
Pigs, number of, in United Kingdom, 128
Pins, manufacture of, 149
Plate, River and tributaries, 84
Plough *v.* spade tillage, 23, 311, 451, 530
Plymouth breakwater, 82
Po valley, system of irrigation, 410
Poland, redemption of serfs, cost of, 370
cotton, woollen, linen factories, 378
revenue and expenditure, 383
Police of great cities, cost of, 178
in England and Wales, 121
of United Kingdom, 540
Population of British empire, increase of, 104, 539
of Europe in 1880, 528
rate of increase in various countries, 2
Porter's estimate of public wealth, 110
of silk-trade in 1835, 148
of travellers, 155
of food-supply of England, 133
Porto Rico, population, exports, 442
Ports, British, entries of all flags, 165
of all nations, tonnage entries, 51
Portugal, agriculture, crops, cattle, 451
banks and finances of, 455
colonial possessions of, 450
commerce, increase since 1820, 449
encumbered estates, sale of, 454
land-owners, number, area, 450
manufactures and minerals, 448
wine, annual product and exports 451
Postal returns for all nations, 94
Potatoes, average crop in all countries 15
nutrition compared with grain, 12
introduced into Russia, 373
into Germany, 303
Prague, great bridge at, 80
Press of all nations, 90
of United Kingdom, 168
Proprietors, landed. See Land-owners
Protection tariffs in United States, 503
Prussia,[1] agriculture, crops, 292
area and population in 1809 and 1876, 290
births, deaths, rate of increase, 3
cattle, increase of, 295
crown lands, cottiers, farmers, 293
debt and taxation, 289
encumbered estates, sale of, 269
forests, area and product, 297
franchise, number of voters, 292
grain-crops, increase since 1841, 295
land-owners, number, area held by 293
manufactures and minerals, 291
military system, effects of, 290
mortgages on rural property, 297
railways, mileage, and traffic, 281
rural banks and societies, 293, 297
serfs, cost, and mode of redemption, 293
treaty of Tilsit, result of, 290
Public works, expenditure in England, 121

[1] In like manner for Germany, Russia, etc.

[1] See Germany.

Public works in India, 224
in Australia, 193
in United States, 549
in various countries. See Railways, Canals.

QUEBEC, increase since 1852, 205
Queen's speech telegraphed to Liverpool, 84
Queensland, colony of, 203
Quetelet on vital statistics, 6
Quicksilver, production in the world, 70
mines of Almaden, Spain, 433
of Idria, Austria, 395
Quinn's linen damasks, Ireland, 542

RAFFEISEN'S co-operative farmers' societies, 297
Railways, mortality, in all countries, 75
death-rate, rising in England, 154
most remarkable in world, 72, 78
of Australia, 192
of Austria-Hungary, 399
of Belgium, 317
of Canada, 213
of Denmark, 353
of France, 254
of Germany, 280
of Holland, 328
of India, 224
of Italy, 417
of Japan, 467
of Russia, 378
of South Africa, 220
of South America, 472, 477, 481
of Spain, 435
of Sweden, 338
of Switzerland, 457
of Turkey, 460
of United Kingdom, 73, 154
of United States, 514
of all nations, mileage, cost, 72
receipts and expenses, 74
Rainfall and sugar-crop in Barbadoes, 26
in relation to timber and sunspots, 26
Ratisbon, bridge over Danube, 80
Rawson, Sir R., on U. States schools, 515
on rainfall, 26
Reclaimed lands in United Kingdom since 1800, 124
Red River, freight of grain to New York, 14
Redgrave on English operatives, 143
Rennie's chief engineering works, 81, 82
Rent-charge banks in Germany, 269
Rentes, French, number of holders, 262, 546
Reserve bullion of all banks in world, 31
Rice crop compared with wheat, 15
exports from India, 225
Rideau canal, Canada, 213
Ridolfi on Italian agriculture, 409
Righi railway, peculiar construction of, 78
Riksbanks of Sweden and Denmark, 347, 359
Rio Janeiro, libraries, hospitals, 478
Rivers and canals of Europe, 83
Roads, connection with price of grain, 11, 14, 427, 459, 465
"Rob Roy," first steamer on high seas, 51
Rochdale co-operative society, 118
Roebling, great bridges built by, 81
Rome, high death-rate at, 6
Ronald's telegraph at Hammersmith, 84
Rosebridge, deepest coal-mine in Great Britain, 68
Roumania, improved agriculture in, 463
Russia, agricultural area, products, 367
banking statistics of, 34, 380
births, marriages, deaths, 1831-1876, 362
canals, complete system of, 379
cattle, increase since 1848, 374
childbed, excessive death-rate in, 371
commerce, increase since 1820, 364
debts and taxes, since 1810, 382
export of grain, flax, cattle, 365
fair of Nijni-Novgorod, 377
female police and tax-collectors, 363
fixity of tenure till 1901, 368
flax plantations of the Don, 373
forests, area and product, etc., 26, 374
gold production in Siberia, 377
infant mortality enormous, 363
landed estates, number, area, 370
loss from annexed territories, 383
manufactures, increase since 1808, 375
merchant classes, capital of, 365
mining industry and products, 376
paper money, inflation of, 34
population, increase since 1835, 362
railways, construction, traffic, 378
schools, libraries, printing-offices, 380
serfs, redemption of, 368
sheep, camels, Tartar flocks, 374
tobacco, beet-root, vineyards, 373
wars of conquest, result of, 362, 382
Rye crop of the world, returns of, 15

SADOWA, ratio of slain at, 529
Safety lamp of Sir H. Davy, 549
Sailing vessels of all flags, 48
Sailors, ratio to tonnage, 162
Sâké-beer, production in Japan, 467
Salt, exports from Portugal, 449
mines of Wieliczka, Austria, 395
production in Great Britain, 152
production in France, 252
production in Germany, 279
Sangatte tunnel project, Calais to Dover, 80
Sanitary improvements, effect on life-average, 106
expenditure in Great Britain, 122
San Jaan del Rey mines, 477
Santos and S. Paulo railway, 477
Sarawak, trade, population, products, 471
forests and rainfall, 26

Savannah, first Atlantic steamer, 52
Savings banks of all countries, 38
increase of deposits, 44, 533
of United Kingdom, increase 117
Sawdust for making bread in Sweden, 340
Saxony, kingdom of, 303
various statistics. See Germany, 265
Scandinavia, births, deaths, 333
commerce, increase since 1850, 334
forest area and product, 26
paper money and banks, 36
wealth and finances, 335
Schiedem gin distilleries, 326
Schools of all nations, increase, 88
cheaper than workhouses, 112
gross annual expenditure, 89
Schultz-Delitsch co-operative societies, Germany, 288
Scotland, agricultural returns, 124, 540
banking, increase since 1850, 113
births, marriages, deaths, 105, 107
crime, decrease of, 143
death-rate, urban and rural, 106
emigration, average for ten years, 107
female population, excess of, 105
income and taxation, per head, 112
insane, deaf, dumb, blind, 173
instruction, advanced rate of, 87, 167
landed estates, number, area, 123, 540
local expenditure, lightness of, 121
roads and bridges by Telford, 155
societies, learned, number of, 168
taxation, incidence of, 112, 122
water-supply of chief cities, 175
Seamen, increased efficiency of, 162
Seehandlung founded by Frederic, 279
Serfs, emancipation of, in Austria-Hungary, 387
in Denmark, 353
in Germany, 267, 292, 298, 301, 307
in Russia, 368
Severn tunnel at Bristol, 79, 87
Sewing-machines, manufacture of, 62, 511
Sexes, ratio of, in various countries, 3
ratio in suicide and insanity, 102, 172
Sheep, number of, in all countries, 531
increase in Great Britain, 129
increase in Ireland since 1841, 132
weight in France and England, 129
Sheep-farming in Australia, 187
in Austria-Hungary, 390
in Buenos Ayres, 480
in Germany, 271, 296, 306
in Russia, 374
in South Africa, 219
in Spain, 431
in United States, 498
Shipbuilding in all countries, 63
in Canada, 210
in Genoa, 413
in Norway, 352
in United Kingdom, increase of, 65
in United States, decline of, 65
Shipping of all flags, 48
increase, since 1868, 50
Shipping, British, in foreign seas, 163
of British Empire since 1810, 161
of all nations, ratio for population, 53
Shipwrecks, decline in ratio of, 54
lives saved by lifeboat association, 55
Siberia, product of gold mines, 28, 377
Sicily, high rate of assassination, 407
wine and oil crops, 411
Silk crop of the world, 58
cultivation in Italy, 414
in France, 247
in Persia, 470
in United States, 506
manufactures in Great Britain, 148
in all countries, 59
Silver, amount of, coin existing, 29
coinage in G. Britain since 1840, 116
consumption by Paris jewellers, 30
decline in value, causes of, 30
demonetised and sold in Germany, 30
production in the world since 1492, 28, 531
quantity absorbed by India, 30
Simplon, St. Gothard, and Splugen, traffic over, 536
Slav population in Austria-Hungary, 384
Slave labour for growing sugar, 20
Slavery abolished in British Colonies, 231, 546
in Brazil, 473
in Danish Colonies, 353
in Dutch Colonies, 331
in the United States, 551
Slave-owners in West Indies, sums paid to, 231
in Guiana, 237
in Mauritius, sums paid to, 228
Snow-cable over the Andes, 536
Societies, learned, of G. Britain, 168, 543
of all countries, 94
of Austria-Hungary, 401
of Brazil, 477
of France, 258
of Germany, 284
of United States, 517
Soldiers, annual growth in France and Germany, 9
British in India, cost per head, 226
reduced mortality in barracks, 7
Sound dues in Denmark, abolition of, 334
South Africa. See Cape Colony.
South Australia, colony of, 196
South America. See America.
Spain, agricultural area and products, 426
banking and finances, 438
births, deaths, rate of increase, 422
blind, deaf, dumb, insane, 100
canal of Castille, 437
colonies of, their products, 439
debt, increase since 1830, 437
grandees, number of, 423
Gypsies, numbers, occupation, 424
instruction, progress since 1848, 435
landed estates, number, area, 429
manufactures and minerals, 431

Spain, population, increase since 1833, 422
pottery works at Seville, 433
quicksilver mines of Almaden, 433
railways, mileage, traffic, 435
sheep-farming, mode of, 431
vineyards, export of wines, 429
Specie. See Bullion.
Speed of railway trains in various countries, 76.
Spindles, cotton of all nations, 57
in woollen and linen factories, 58
Spirits, consumption in all nations, 18
in United Kingdom since 1840, 137
Sponge fishery of Cyprus, 230
Squatters' runs in Australia, 183, 201
in South Africa, 218
St. Esprit, bridge over the Rhone, 80
St. Gothard, tunnel of, length, cost, 79
hospice of, 536
St. Lawrence, navigation of, 213
Steam Locomotion on land and water, 1802, 71
pumps, most powerful used, 87, 327
power of all nations, 62
Steamers, greatest speed yet attained, 64
invention of, 535
increase since Suez Canal, 49
largest built since 1840, 64
of all flags, tonnage of, 48, 53
remarkable voyages of, 52, 535
Steel, Bessemer's improvements in, 77, 148
pens made at Birmingham, 62
production, annual, in all countries, 61
Stein emancipates Prussian serfs, 267
Stephenson, great bridges built by, 81
Sterility in noble families, cause of, 4
Stewart diamond, 217
Still-births, ratio of, 3
Stockton and Darlington, first railway, 71
Stolberg emancipates Danish serfs, 353
Styria, sheep-farms of, 391
quality of iron found in, 395
Submarine cables, 85
Succession duty in United Kingdom, 112
Suez Canal, cost, traffic of, 82, 461, 548
its effect on navigation, 48
Sugar, consumption in all countries, 19
increased consumption in Great Britain, 137
production, annual, in the world, 20
beet, production in Austria, 393
in France, 249
in Germany, 275
in Russia, 373
cane, production in Brazil, 475
in Cuba, 440
in Guiana, 237
in Java, 332
in Mauritius, 229
in Peru, 486
in West Indies, 232
made from palm and maple, 20
Suicide, increase of, in Europe, 102
Sun-spots, connection with rainfall, 26
Sun-spots, connection with shipwrecks, 531
Superior, Lake, copper-fields, 69
Susa and Zahara canal project, 83
Suspension bridges, first use of, 80
Sweden, agricultural area and products, 339
banks and finances, 347
bears and wolves killed, 338
births, marriages, and deaths, 333
canals of Gotha and Meler, 338
cattle, increase since 1837, 342
commerce, returns since 1801, 344
debt and taxes, lightness of, 348
farms and forests, area, 340
farmers, condition of, 341
fisheries, value of, 338
instruction, high grade of, 334
iron, production since 1814, 344
landed estates, number, area, 340
manufactures and minerals, 342
sawdust for making bread, 340
Switzerland, banks of issue in, 33, 37
agriculture and manufactures, 456
Sydney, first colony in Australia, 192
Symington and Miller's steamboat, 535
Szegedin, floating flour-mills at, 394
steam-pumps used at, 87

Tacna railway into Bolivia, 487
Taine, M., on English workmen, 142
Tait, Dr., on hospitals, 544
Tartar sheep-farmers in Russia, 374
trade with Russia, 366
Tasmania, colony of, 194
Taurida breed of Russian merinoes, 374
Taxes, British, lighter than in 1811, 119
incidence of, in all countries, 42
increase since 1820, 39
local, in Great Britain, 121
Tea, consumption in all countries, 19
exports from India, 225
increased consumption in Great Britain, 137
production, annual, in the world, 20
Telegraph, electric, first patent for, 84
land lines and cables, 85
messages of United Kingdom, 537
mileage, etc., for all countries, 86
Telford, his tunnels and bridges, 78, 81
his works in Scotland, 155
Temple, Sir W., on Dutch loans, 330
Tenant-farmers in Argentine Republic, 481
in Belgium, 310
in Canada, 208
in Denmark, 355
in France, 241
in Germany, 294, 302
in Holland, 322
in Italy, 408
in Portugal, 452
in Spain, 429
in Sweden, 341
in Turkey, 463

Tenant-farmers in United Kingdom, 131
Teneriffe, island of, 443
Texas, annexation to United States, 491
  cattle-farms in, 498
Textile industries, summary of, 56
  of Great Britain, 144
Thames tunnel, made by Brunel, 79
Thessaly and Epirus, agriculture of, 462
Thier's loan of indemnity, 262
Ticino canal, in Italy, 418
Tillage, ratio of, in all countries, 28
Timber, yield of all forests, 26
Tin, production in the world, 70
  of Cornwall, since 1806, 149, 152
Tobacco, production, consumption, 21
  increased use of in Great Britain, 137
Toledo sword-factory, 432
Tonnage of shipping of all nations, 48
  increase of, since 1868, 50
  of railway freight of world, 74
Toronto, increase since 1852, 205
[1] Trade of world since 1830, 45
  for ten years, 47
Trade of United Kingdom since 1816, 156
Transfer of land, cost of, 530
Transvaal, colony of, 215
Traveller's expenditure in Switzerland, 456
Trevithick's patent for locomotives, 71
Trinidad, colony of, 234
Tulips, cultivation of, 324
Tunnels, length and cost of, 79
Turkey, population, debt, railways, 460
  agriculture, land-tenure in, 463
Twins, remarks upon, 4

Union Pacific railway, 78, 514
United States, agricultural progress, 493
  balance of trade since 1801, 502
  banks and paper money, 518
  bankruptcies in six years, 520
  canals, length and cost, 512
  cattle, increase since 1840, 497
  cotton, production since 1830, 495
  crops, increase since 1840, 494
  commerce, imports and exports, 502
  debt and revenue since 1800, 521
  farms, number, area, 1850-1870, 498
  flour mills, product of, 510
  gold and silver production, 28, 521
  grain exports, increase of, 496, 504
  greenbacks, 1862-1879, 519
  immigrants, from 1820, 491
  land-grants, homestead do., 493
  libraries and learned societies, 516
  live cattle, shipment of, 506
  manufactures and minerals, 507
  mint, issue since 1840, 521
  paper money, 518
  petroleum, production, export, 512
  population, increase since 1800, 491
  pork-packing and exportation, 497
  protective tariffs since 1816, 503
  railways, traffic, mileage, increase, 514
  schools, statistics of, 515
  shipping, entries, tonnage, 501
  steam-power, operatives, etc., 50.
  sugar-planting, decline of, 506
  timber, quantity felled, 510
  tobacco, production and consumption, 21, 494
  vineyards and wines, 496
  war for the Union, 9, 40, 492
  war of Independence, 491
Unmarried ratio, 6, 107
Uruguay or Banda Oriental, 488

Valdepeñas, good for longevity, 8
Venezuela, republic of, 489
Venice, first bank founded at, 32
Victoria, colony of, 200
Vineyards of the world, 17, 529
  of Algeria, 264
  of Australia, 106, 193
  of Austria, 390
  of France, 243
  of Germany, 269
  of Italy, 408, 411
  of Portugal, 451
  of Russia, 373
  of South Africa, 217
  of Spain, 429
  of United States, 496
Voters in United Kingdom, number of, 142
  in various countries, 542

Wages and food in all countries, 65
  in Great Britain since 1840, 142
Waggons of eighteenth century, charges by, 153
Wagner's census of Europe, 4, 528
Wakefield Gibbon, founder of Adelaide, 196
Wakefield, Mrs., founder of savings-banks, 117
Wars, cost of, to Great Britain, 539
  of nineteenth century, numbers slain, 9
Washington, Gen., emits paper money, 518
Watchmaking in Switzerland, 456
  in France, 249
Water-power for factories, 456, 507
Water-supply of cities, 175
[1] Wealth of all nations, 42
"Welcome" nugget of Ballarat, 28
Wellington, first colony in New Zealand, 198
Welsh colony in Patagonia, 481
West Indies, trade, product, etc., 231
Western Australia, colony of, 195
Wheat. See Grain.

[1] See Commerce.

[1] See Finances.

Widows of all nations, 6
Wild-cat banks of the United States, 518
William III., bounties for Irish linen, 146
duties on coal, 150
Windmills in Holland, 328
Wine. See Vineyards and Agriculture.
Wives under twenty years of age, 6
Wolves. See Game.
Women self-supporting in England, 141
Wool clip of the world, 57
imports into Great Britain, 542
imports into Europe, 535
Woollen manufactures of all nations, 56, 58
Working-classes, all countries. See Wages.
of Great Britain, income of, 113
condition of, 142
Working-expenses on railways, 74
Works, public, in England, 121
Wrecks compared with tonnage, 54
Wurtemburg, kingdom of, 300

XEREZ, vineyards of, 429

YERBA-MATE or Paraguayan tea, 20
Young's, Arthur, agricultural returns, 126
notes on turnpike roads, 155
Yungas coffee, best in the world, 486

ZEGEDIN. See Szegedin.
Zinc, annual production of, 70, 536
Zulu War, cost of, 539
Zuyder Zee, project for draining, 327
herring fishery of, 325

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